Final Technical Report (FTR)

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Executive Summary:

Sunvestment Energy Group (previously called Sunvestment Group) was established to create a web application that brings together site hosts, those who will obtain the energy from the solar array, with project developers and funders, including affinity investors. Sunvestment Energy Group (SEG) uses a community-based model that engages with investors who have some affinity with the site host organization. In addition to a financial return, these investors receive non-financial value from their investments and are therefore willing to offer lower cost capital. This enables the site host to enjoy more savings from solar through these less expensive Community Power Purchase Agreements (CPPAs).

Presently, many nonprofit organizations and small-to-medium-sized commercial operations are unable to pursue solar energy projects. The former cannot take advantage of tax credits, while the latter often have difficulty obtaining sufficient capital for the projects. The SEG solution is to facilitate solar projects by developing a broader range of funding sources, including those whose motivations go beyond the simply financial, and more intelligently matching these investment sources to projects via a web-based platform. This service will assist in educating the market on the value of solar as a cost-effective energy source and develop new sources of capital, including local debt investors (through a Broker Dealer service we are embedding in the platform), and tax equity investors with motivations 'above and beyond' the financial in supporting solar projects. Specifically, the web platform enables non-profits and small-to-medium-sized commercial entities to more easily finance solar projects by expanding access to lower cost funding and investment partners.

This project also serves to streamline the solar investment process and thus to reduce the soft costs of solar for the mid-size solar market. To that end, SEG has created legal documentation templates to complete CPPA projects. This helps to scale the service to a wider audience, with the goal of eventually making the documents available for purchase on the platform. As these processes become more automated, Sunvestment Energy Group will be able to rapidly grow the CPPA model across the country.

The SEG community power purchase agreement (CPPA) typically reduces the cost of financing projects for commercial entities and non-profits by 20% to 50% through

a lower cost of capital. The lower capital costs combined with lower transaction costs—from leveraging template documents and financial structuring knowledge—allow initial energy rate discounts to the site host of approximately 15% to 30%+, compared with average savings of 10% to 20% for average PPAs. As a result of these increased savings, the CPPA model could potentially help as many as 30% to 60% of the 36,000 local government entities, 127,000 public and private schools, and 1,580,000 non-profit organizations across the U.S gain access to low cost solar energy. Finally, the CPPA approach provides additional benefits to local communities by keeping more of the investment funds local - the solar investment returns and their corresponding economic benefits extend to the community itself, all while educating the community about the benefits of renewable energy.

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Background:

N/A- not a research project.

Project Objectives:

Over the past two years, Sunvestment Energy Group has successfully developed over 50MW of solar energy capacity across more than 12 states. This achievement is due in large part to our ability to provide education and transparency to site hosts on their multiple solar options and to deliver more savings for the local community and the non-profit or municipality that is going solar. We have found our message of solar as an investment opportunity that also enhances local communities deeply resonates with site host organizations as well as investors. As we continue to reach out to more impact and community minded investors and bring these additional sources of lower cost capital onto our platform, we expect the number of solar installations we can fund to further scale, bringing down the cost of obtaining financing for the small commercial sector.

At a high level, the early objective of the project was to design and develop the initial transactional architecture of a web based platform to collect funds from prospective investors. The intention was for the platform to provide investment-tracking services, including key account information, financial reports, investment metrics, and updates as to the performance of a given solar array, in order to make solar investments more comparable to other classes of investments (e.g., stock portfolio they can track online) with which individuals are familiar, giving them confidence and visibility into this type of investment and thereby helping to make solar investment more widespread. However, as we began to explore delivering on this vision in earnest we ran into a number of compliance challenges that have led us to evolve our business plan. The most important being we plan to sell debt notes through a fully licensed broker-dealer subsidiary on our platform to ensure all outreach efforts we pursue are entirely SEC compliant.

Major tasks with summaries and their respective subtasks are listed below. Additionally, the deliverables associated with our project are included in a chart in Appendix A.

- **Task 1 – Website Software Development and Hosting:** SEG developed an interactive transactional web based platform that provides a gateway for the interaction between potential site hosts, EPCs / developers and investors for solar energy projects. This web based platform draws in investors, site hosts and EPCs / developers with an attractive and user-friendly interface that broadens

access to solar project processes, making these more accessible and less time-consuming, thereby increasing participation across all parties.

- Subtask 1.1 Hosting Environment and Software Selection & Implementation
- Subtask 1.2 Visual & Content Design
- Subtask 1.3 User Functionality Features
- Subtask 1.4 User Feedback and Testing

- **Task 2 – Web Portal Business Capability:** SEG will develop an interactive transactional web portal that will provide a platform for interaction and investment between potential site hosts, developers and investors for solar energy projects. SEG has, and will continue to contract with accounting, legal, software, SEC compliance, and security firms to assist in the development of this funding portal that will facilitate and accept investments in solar projects. This task has taken longer to develop because we are electing to pursue a business model that will be SEC compliant. As a result, any client facing transaction capability needs to be built under the auspices of a broker – dealer model, which we are developing today. We are also developing a library of legal templates and transaction processes that will break down solar proposals, contracts, and agreements into sub-sections that can lead to economies of scale that reduce the fees spent on legal documentation by site hosts, investors, and developers in the future.
    - Subtask 2.1 Transaction Functionality
    - Subtask 2.2 Account Management SEG
    - Subtask 2.3 Legal Document Templates
        - Subsubtask 2.3.1 Limited Liability Operating Agreement
        - Subsubtask 2.3.2 General Risk Factors
        - Subsubtask 2.3.3 Power Purchase Agreement and Land Lease Agreement
        - Subsubtask 2.3.4 Engineering, Procurement, and Construction (EPC) Agreement
        - Subsubtask 2.3.6 Any Other Documents Deemed Necessary for CPPAs

- **Task 3 – Customer Engagement:** This task includes the efforts to obtain and sign up new site-hosts, investors, and developers – in a sense, develop a pipeline of interested parties. We have consistently developed educational content that can be accessed through the web site in addition to materials that

can be shared as follow up education and other collateral that a 'solar champion' may need internally to get stakeholders aligned, or to reach out to their own local investors. Also, as site hosts may not have experience with many solar incentives and other financial structuring options, our website provides education, guidance and tools that will help them understand the best solution for their situation. The dynamic nature of the web platform allows each user type to input relevant data that will build on the inputs of other relevant stakeholders on a project, in order to facilitate the project.

- Subtask 3.1 Site-Hosts
- Subtask 3.2 Accredited Anchor Investors
- Subtask 3.3 Community Investors
- Subtask 3.4 Non-accredited Investors
- Subtask 3.5 Solar EPCs / Developers

Task 4 – Business Operations: SEG continues to build our operating business as we refine the business model and platform. Certain functions and tasks in this project will require SEG to hire new consultants and personnel to execute on the ideas and work. SEG will also need to adapt its accounting practices to meet the requirements of SEC reporting and metrics process. SEG has actively engaged with legal counsel to ensure that web platform development and its business model abide by all local, state, and federal regulations and we will continue to do so.

- Subtask 4.1 Project Management and Reporting
- Subtask 4.2 Operations
- Subtask 4.3 Legal
- Subtask 4.3 Public-Data

Project Results and Discussion:

Sunvestment Energy Group is happy to report that all deliverables associated with this award were met. A summary of our deliverable targets and actual achievements are listed below to demonstrate the often over-achievement of many of our Deliverables.

Final Deliverable	Achievement
30 projects posted	**35 projects are posted** on our website and can be viewed by any investor who is interested in viewing that investment opportunity.
65 LOI's in total signed by site-hosts	**65 community organizations** have signed letters of interest stating that they would like to learn more about how to go solar through our community PPA process and online platform.
65 LOI's in total signed by investors	Over **108 potential investors** have signed letters of interest stating that they want to learn more about the projects
At least 20 EPC / developers registered and account setup complete;	**22 EPC/developers** have registered and been vetted through our platform and their account setup is complete.
Combination of 65 community and traditional PPAs in total, signed by site-hosts and investors, including at least 3 non-profit and municipal entities in at least 3 states;	**70 community and traditional PPAs** have been signed by site-hosts and investors, we have a large pipeline of projects in development over the next 3 years. **52 non-profit and 22 municipal entities in at least 12 states**;
Minimum of 6 funded projects in total and 12 EPC bids in total received;	**We have obtained funding for 7 projects in total and have received 15 EPC bids.**

Sunvestment Energy Group has found that achieving the overall objective of our project will require continued work and some changes to our company structure. At its core our business seeks to: 1) lower the transaction and capital costs for solar projects so that site hosts will reap more savings, 2) facilitate more community-based funding of solar projects to keep more of the investment returns local; 3) help solar projects move forward that cannot get completed with traditional funding sources; and 4) expanding access to solar investing to a wider range of interested and appropriate investors.

In addition to lowering transaction costs with our web platform and more standard documents, we have worked to engage community investors or others with an affinity for an underlying project willing to fund part of this effort with lower cost capital, as one of our primary goals is to increase the savings organizations can achieve with solar.

In looking for ways to include community-anchored capital into the 'capital stacks' that are put together to fund projects we examined a number of financial structuring models that might permit this.

As we worked through structuring scenarios we ran into challenging regulatory constraints around engaging with community investors who may lack the financial sophistication to engage in the appropriate diligence on opportunities. Having said that, much remains the same: the SEG Platform (website) remains at the core of our model, providing a cost efficient platform for investors, projects and developers. EPCs, Developers & Site hosts may all bring prospective projects to the platform. In addition, the participation of sponsor and tax equity investors is into the Special Purpose Entity (SPE) directly today.

Significant Accomplishments and Conclusions:

Over the course of this award Sunvestment Energy Group has learned a great deal about the possible financial structures that we can undertake in order to achieve our stated goals of (1) decreasing the costs of nonprofits, municipalities, and small commercial enterprises in going solar and (2) involving local community investors in the process. After signing up 65 interested site hosts, and successfully funding 7 projects, we are confident that our message and model is applicable to many target enterprises and organizations, and that we will be able to scale our model by moving to more standardized documents and processes, helping even more site hosts go solar through our platform and community PPA model. It is clear that combining the financial structures we have been able to refine with affinity anchored or motivated equity financing, we are bringing down the cost of solar for these small commercial companies, while making low cost financing accessible to them.

As has been described, we encountered difficulties in the process of involving local community investors. While we have been able to secure legal opinion on the possibilities for including non-accredited investors in our CPPA's, we have also found that to include such non-accredited partners would raise transaction costs in most cases above what is appropriate and economically feasible. We have worked through several different fund structures during this time period, including both a co-op model as well as a project specific model and have determined that the best way to both entice and protect our investors is to structure funds under a General Debt Fund that pools invested capital and is invested into several projects.

Although the General Debt Fund approach is described in detail in other sections of this report, the general idea is that a back-leveraged debt fund allows investors to participate in funding several projects rather than one single project.

While in the short term, addressing the broker-dealer issues is increasing our costs (to set up the compliance needed), long-term this is the best path that will enable us to really leverage the web platform and reach a broader audience of prospective investors. We feel strongly that taking this time and expense to set up processes and structures to be compliant will allow us to succeed with our original intent and ensure that we are achieving our mission and goals within the confines of all appropriate regulations.

Inventions, Patents, Publications, and Other Results:

Trademarks/Patents Pending:

- Sunvestment Energy Group
- Invest In Your Community. Invest In Solar.
- Logo
- Share Your Sun

Publications:

Sunvestment Energy Group has been featured in the following publications:

- *Central New York Business Journal* featured SEG in a full-page article about our Madison County project;
- The *Madison County Courier* featured SEG as a "Top News Story" for the Madison County project.
- http://breakingenergy.com/2015/05/29/the-new-york-sun-initiative-allows-regional-developers-to-address-underserved-commercial-solar-sector/
- http://www.watertowndailytimes.com/news03/sackets-harbor-plans-solar-array-to-power-municipal-buildings-20150716
- http://sunvestmentgroup.com/press-room/998
- *The Stratton Report* included SEG in two articles regarding the Cedar Falls Community Solar Project
- http://strattonreport.com/news/utilitys-active-role-enabling-community-solar-project-allows-business-model-innovations/
- http://strattonreport.com/news/sunlink-rer-complete-1-5-mw-1200-customer-community-solar-farm-iowa/
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Blogs:

In addition to traditional media, Sunvestment Energy Group works to publish about 2 blogs per month. We have published over 25 blog pieces and below is a snap shot of the highest performing articles. To view any of our blogs in full, please visit http://blog.sunvestmentgroup.com.

Figure 2 Top Blogs by Readership

Other Social Media:

Sunvestment Energy Group maintains an active presence across Twitter, Facebook and LinkedIn, regularly interacting with followers and fans in a manner than presents our company as a thought leader in the solar investment and PPA space. We

have steadily produced content via these sources at least 5-7x weekly in order to maintain consistency and stay part of the vibrant conversations that take place online. Monthly, we generate hundreds of links to our website via social media, and this number continues to grow. We have included a snap shot of our social media performance below.

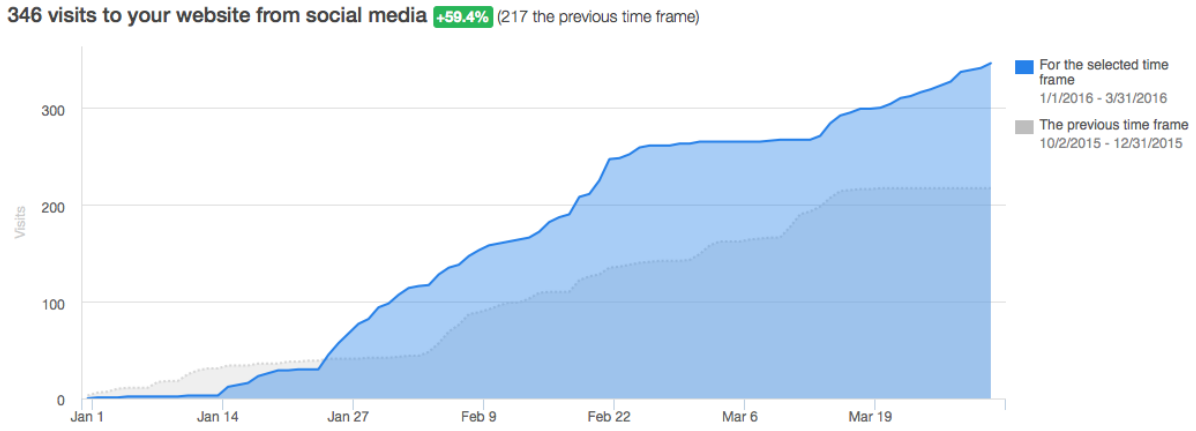

Figure 3 Visits to Website Due to Social Media

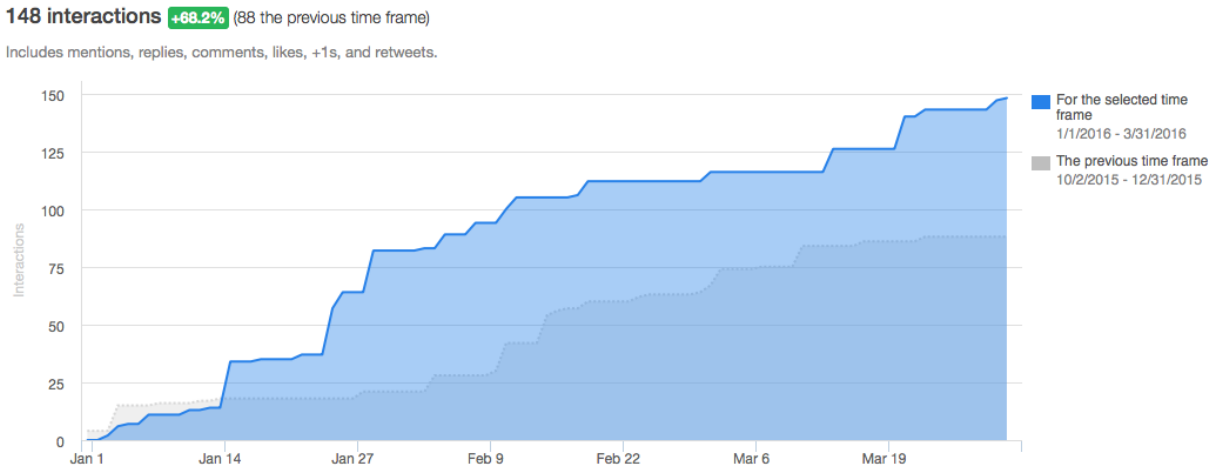

Figure 4 Interactions with Social Media Audiences

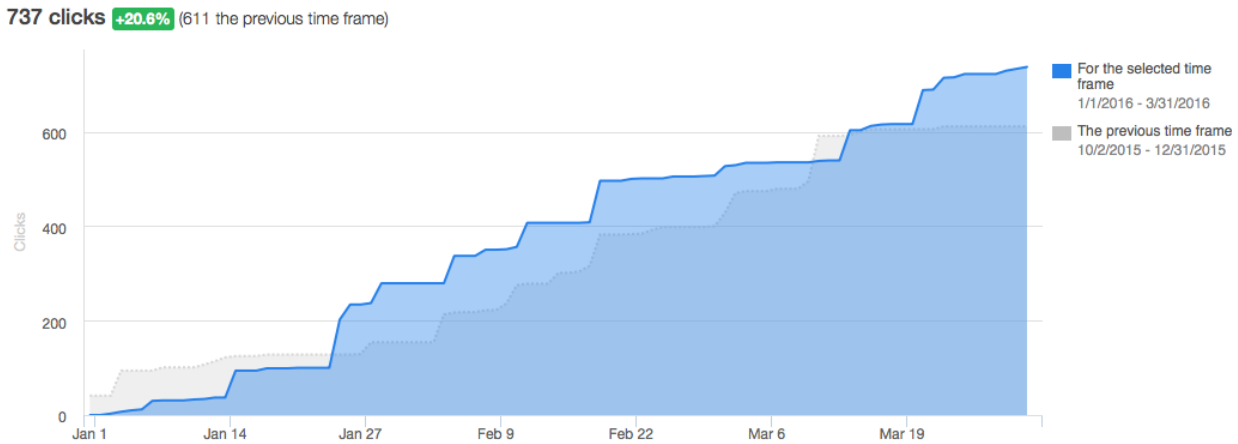

Figure 5 Social Media Hits

Media Outreach:

- SEG produced a short video to that was submitted to Start - Up Alley, a technology competition produced by the Solar Power International (SPI) conference held in Anaheim CA, September, 14-17th, 2015. We were honored to earn a spot as one of just over a dozen semi-finalists out of over one hundred entries. This lead to our presence with a booth in the 'Start-Up Alley' area at that conference – which provided us with great visibility and a number of partner contacts and relationships.
    - The video can be viewed here: http://sunvestmentgroup.com/press-room/1034
- We produced a five minute client testimonial video that will be used both in social media and on our website. It is currently going through a review process but the final version can be seen here:
    - https://vimeopro.com/ffp/sunvestment-energy-group with the password – ffp. When there, click on the title - Aerzen SEG Story 2.3

Presentations:

- Sunvestment Energy Group presented at SUNY Best's March 5th, 2015 – Inspiring Energy Initiatives: The Private Sector.
- Sunvestment Energy Group presented at ANCA Community Solar Conference in Lake Placid, NY in March of 2016.

- Sunvestment Energy Group presented at the NATIONAL COMMUNITY SOLAR PARTNERSHIP WORKSHOP Atlanta in May of 2016

Path Forward:

The web platform is currently in Beta stage – it has strong functionality based on the early iterations of the business model that has been enhanced with VOC feedback (See Appendix B) – but as this model has had to evolve (primarily due to our compliance with SEC regulations) some of these evolutions have not yet been built into the web platform. Today it can and does act as a draw for new projects from site hosts or developers.

In addition, SPE asset purchase investments can be completed today.

We plan on initially raising a general debt fund that will be used to invest in a diverse pool of projects. This allows us to reach out to early adopters who may be primarily eager to invest in solar for the sake of solar and would benefit from the diversification of a general fund.

As the investment product and processes have become clearer, we are now in a position to develop the accounting and other investment back-office support and oversight tools that will interface with the web platform and that we will need to manage these funds safely and accurately. As this will lead to significant additional investments in technology and compliance, we are raising the capital needed as we continue to develop the pipeline of projects into which these investment funds can be deployed.

Within the next 6-12 months we expect to have launched a fund with investors who will access information about the investments of their fund, as well as returns and statements via the web platform.

Appendix A

Deliverable Table			
Deliverable	**Month** **%total funding**	**Deliverable Title** **Deliverable Description: Specific, Measurable, Quantitative** ***Deliverable Metrics should be those which best reflect the functionality of the proposed product***	**Verification Process & Additional Notes** **What, Who, Where**
D 0	**Month 1** **20%**	**Baseline** Technical 1. Development of full SVG platform functional specifications document defining specifications for entire web platform; 2. Creation and implementation of hosting environment and supporting content management system (CMS) platform; 3. Web platform administrative logins and views in place; 4. Ability to post dynamic content in place (pages, blogs, documents, and media); Business 5. 20 Letters of Support from site-hosts / EPCs / developers / investors for the SVG platform; 6. Review of market traction to date: number of site-hosts, EPC / developers and Investors participating to date;	Technical 1. DOE to review functional specifications document for web platform; 2. DOE able to verify hosting environment and CMS functionality via administrator login and security credentials; 3. DOE able to verify hosting environment and CMS functionality via administrator login and security credentials; 4. DOE able to view content placement on SVG web platform; Business 5. Copies of the Letters of Support sent to the DOE; 6. Documentation provided to DOE to list participation levels to date by key stakeholders;

D 1	**Month 4** **30%**	Technical 1. Preliminary application release: potential site-hosts able to submit sites for qualification / approval, SVG administrators able to review and approve sites for listing; legal documents available for purchase; 2. Review user feedback and extend application functionality to improve user's experience; Business 3. 5 projects posted*; 4. 3 signed site-host LOI's to move forward with project and engage with investors**; 5. 5 SVG qualified EPC/developers registered and account setup complete;	Technical 1. Documentation provided to DOE, Provide administrator access view and test downloadable PDF forms; 2. Compiled list of Voice of Customer (VoC) and test group feedback provided to the DOE; Business 3. Administrator access provided to DOE to view posted qualified projects; 4. Copies of the signed LOI's provided to the DOE; 5. Screen shares of EPC/developer account setup to the DOE;
D 2	**Month 9** **20%**	Technical 1. Site-host list and search by selected criteria to match site-hosts with investors/donors and EPC/developers; 2. Bid posting section for EPC/developers; 3. Interactive investor options tool; 4. Compile functionality feedback list identified in D1 by VoC and test group for integration into SVG web-platform***; 5. Website re-launch; Business 6. 10 projects posted in total*; 7. 15 LOI's signed by site-hosts in total**; 8. 6 LOI's signed by investors for funding minimum of $300k**; 9. At least 10 EPC / developers	Technical 1. Screen shares of search options provided to the DOE; 2. Provide DOE with administrator access to EPC / developers site; 3. Provide DOE with administrator access to investors site; 4. Site map identifying new features added to site provided to the DOE, along with Administrator access to evaluate final refinements; 5. Full listing of items added in D2 for re-launch of website provided to DOE; Business 6. Screen shares of posted projects provided to DOE;

		registered and account setup complete; 10. Draft of measurable metrics for open public data plan;	7. Site-host Letters of Intents provided to DOE; 8. Investor Letter of Intents provided to DOE; 9. Screen shares of EPC/developer account setup to the DOE; 10. Copy of metrics draft sent to DOE for review;
D 3	**Month 12** **5%**	Technical 1. Reporting mechanisms for project life cycle; 2. Web project monitoring and investment status reporting; 3. Functionality identified in prior deliverable by test group and VoC added to platform***; 4. Provide list of identified functionality to add to platform by the next deliverable based on test group and VoC feedback; Business 5. 20 projects posted*; 6. 25 LOI's in total signed by site-hosts**; 7. 12 LOI's in total signed by investors**; 8. At least 15 EPC / developers registered and account setup complete; 9. Combination of 15 community and traditional PPAs in total, signed by site-hosts and investors, including at least 3 non-profit and municipal entities in at least 2 states; 10. Minimum of 4 funded projects in total and 6 EPC bids in total received;	Technical 1. Documentation provided to DOE; 2. Documentation provided to DOE; 3. Site map identifying new features added to site provided to the DOE, along with Administrator access to evaluate final refinements; 4. Compiled list of Voice of Customer (VoC) and test group feedback provided to the DOE; Business 5. Screen shares of posted projects provided to DOE; 6. Site-host Letters of Intents provided to DOE; 7. Investor Letter of Intents provided to DOE; 8. Screen shares of EPC / Developer account setup to the DOE; 9. PPA documentation provided to DOE; 10. Funding and bid documentation provided to DOE; 11. Deliver report to DOE on Commercialization and Market

		11. Commercialization and Market Launch Plan completed for platform; 12. Release of platform open public data plan;	Launch Plans; 12. Copy of open public data plan shared with the DOE