Final Technical Report (FTR) Template

Agency to which Report is Submitted:	Department of Energy - Energy Efficiency and Renewable Energy - Golden Field Office	
FOA Name:		
FOA Number:	DE-FOA-0001225-15555	
Report:	Research Performance Progress Report (FINAL)	
Award Type:	Cooperative Agreement	
Award Number:	DE-EE0007202	
Prime Recipient:	Ra Power Management, Inc.	
Prime Recipient Type:	For-Profit	
Project Title:	Solar Asset Management Software	
Principal Investigator (PI):	George Zviagin, CEO, george.zviagin@RPM.solar - 510-364-3748	
DOE Technology Manager (TM):	Dan Conant / Ryan Stolley	
DOE Technical Project Officer (TPO):	Dan Stricker	
DOE Grants Management Specialist (GMS):	Eddie Campbell	
DOE Contracting Officer (CO):	Diana Bobo	
Prime Recipient DUNS Number:	79611451	
Award Period of Performance (POP):	Start: 10/1/2015	End: 9/30/2016
Award Budget Period (BP):	Start: 10/1/2015	End: 9/30/2016
Date of Report:	10/12/2016	
Reporting Period (covered by this report):	10/12/2016 to 9/30/2016	

Commented [PS1]: sept only has 30 days

Executive Summary

Ra Power Management (RPM) has developed a cloud based software platform that manages the financial and operational functions of third party financed solar projects throughout their lifecycle. RPM's software streamlines and automates the sales, financing, and management of a portfolio of solar assets. The software helps solar developers automate the most difficult aspects of asset management, leading to increased transparency, efficiency, and reduction in human error. More importantly, our platform will help developers save money by improving their operating margins.

A well designed, scalable, and fully integrated solar management platform is desperately needed in order for third party financed solar to be widely adopted. With the addition of solar lease securitization, the need is even greater for timely, accurate financial information for investors, auditors, and regulators. The RPM platform offers an all-in-one solution by providing pricing and customer bids plus operational and financial asset management.

Our software addresses one of the most important areas of the solar industry right now, financing. By greatly improving the level of standardization, transparency and insightful analytics, our software will help convince investors that solar is an attractive asset class. Ultimately, our system will help solar developers prepare for the most cost effective form of financing, securitization. The level of information, analytics and auditability needed to achieve securitization will only be possible if companies have a unified asset management system. Our product is built from the ground up with state of the art technology and by people with expertise in solar financing, to meet developers' unique needs.

The RPM platform will drive down the cost of financing and managing solar assets, resulting in a lowered cost of capital and lower energy costs for the end customer. Funding from EERE was essential to accomplishing rapid development of our software and in helping to provide much needed asset management capability to the solar industry as quickly as possible.

RPM aims to empower solar developers to efficiently manage the financial and operational aspects of their solar assets. We aim to impact the industry by:

- Reducing developer costs, which in turn can reduce LCOE.
- Minimizing investor risk through significantly improving data quality on asset performance.
- Increase the attractiveness of solar as an asset class, attract more capital, and lower the cost of capital
- Bringing standardization and transparency to solar financing.

Table of Contents

Background

To date, solar developers have, quite reasonably, focused their resources on customer acquisition rather than infrastructure to manage the financial and operational aspects of their expanding portfolios. This has led to siloed data, inefficient manual processes, and rising operational costs. If not addressed, these problems threaten the further scale up of the industry and the influx of capital necessary to drive scale-up.

Currently in the solar industry, there are:

- No comprehensive solutions to manage the financial aspects of third-party financed solar assets;
- Limited dashboards to provide oversight at the fund level;
- Extensive reliance on manual processes, which are costly to scale and vulnerable to error; and significant amounts of time spent scrubbing/managing data, leave little time to run the analytics necessary to evaluate the financial and operational performance of solar assets.

While there are software solutions for generating customer bids or other aspects of asset management, none offer the comprehensive solution that RPM does. The RPM platform offers an all-in-one solution by providing pricing and customer bids plus operational and financial tracking of asset management. The RPM platform will drive down the cost of originating, managing and optimizing solar assets, resulting in lower energy costs for the end customer.

With the drive towards of solar lease securitization, the need is even greater for timely, auditable, and accurate financial information to provide to investors, auditors and regulators. This adds a complex and burdensome layer of financial reporting that solar developers are not necessarily well-equipped to address. RPM is well positioned to meet those needs and has built a platform specifically to address these issues.

Project Objectives

A. OBJECTIVES

RPM proposed to build a beta-version, trial-ready software platform for pricing, asset management, reporting, O & M, and due diligence that will optimize and streamline the operations associated with financing and managing third-party financed solar projects. The scope of work was built upon the preliminary development to date and focused on improving several groups of capabilities with the goal of creating a minimum viable product for beta testing.

RPM's innovative software effectively streamlines the asset management process and drives down the overall cost of financing new solar systems and maintaining installed ones. Our pioneering software will help organizations automate the most difficult aspects of asset management, leading to increased transparency, efficiency, and reduction in human error. More importantly, our platform will help developers save money by improving their operating margins and eliminating the need for costly manual labor to act as a stop-gap measure for inadequate financial infrastructure.

Upon completion of the tasks described below, RPM's Asset Management Platform (AMP) software was released for trial use and subsequently commercialization with solar developers. Our software provides the capability to manage the financial and operational lifecycle of solar projects from start to finish: including generating contract pricing bids, serving as a central repository for previously siloed data sets, calculating financing valuations for fund deployment, and generating a full suite of reports and analytics. It is compatible with csv data import for easy integration with a range of other programs.

Ultimately our software allows solar developers to finance and manage their solar assets much cheaper than they currently are. This goes a long way in driving down the overall cost of solar for the end user and the United States overall. The two areas that solar developers have not been able to lower the cost has been related to long-term management of the systems and the financing cost of new systems. Both areas would see great improvement with the addition of a product like ours.

B. TECHNICAL SCOPE SUMMARY

We focused on building out the following:

1. A software platform for solar developers to manage their solar portfolios. Functionality will include:

    a. **User Interface/User Experience (UI/UX):** Developing user functionality is a priority as getting user feedback as early as possible is our aim.
    b. **Data Security:** We will improve the security of the system so that it is ready for external alpha version testing.
    c. **Fund Set-Up:** Enables a user to easily enter criteria for setting up a new fund.
    d. **Data Import:** Enables easy import of data from other systems via csv.

e. **Analytics and Reporting:** We have received feedback from our customer base that building out analytic and reporting customization options is necessary to create a minimally viable product.
f. **Tracking multiple versions of 'actuals' data:** A unique and highly valuable aspect of the RPM platform is the ability to maintain multiple versions of "actuals" data as it is refreshed over time.
g. **Pricing Engine:** By building in a front end pricing engine, the RPM platform will offer a comprehensive solution from customer proposal to O & M.

2. Create software that will empower solar developers to efficiently manage the financial and operational aspects of their solar assets. We aim to impact the industry by:

    a. Reducing developer costs by automating the most difficult aspects of asset management, leading to increased transparency, efficiency, and reduction in human error. Our platform helps developers save money by improving their operating margins, which in turn reduces LCOE;
    b. Reducing investor risk through significantly improving data quality on asset performance. This will increase the attractiveness of solar as an asset class, attract more capital, and lower the cost of capital; and
    c. Bringing standardization and transparency by accurately tracking the performance of all solar data relevant to solar financing.

C. TASKS TO BE PERFORMED

Task 1.0: Customer Engagement and Research

Task Summary: Identify list of solar developers who will provide ongoing feedback on software functionality. Also build relationship with these potential customers and convert some to initial trial users. After an initial trial period convert user(s) to paying customer.

Task 2.0: Software Development

Task Summary: Take baseline software and develop core software features as well as validated non-core features.

Task 3.0: Software Technical Documentation

Task Summary: Write formal technical documentation and procedures.

Task 4.0: Evaluate making data public

Task Summary: We will periodically evaluate the possibility to make relevant pieces of our clients' sanitized data that is housed on our software available to the broader public.

Task 5.0: Software validation and testing

Task Summary: Validate and test software functionality with DOE and initial trial users.

Task 6.0: Operations

Task Summary: Purchase necessary equipment for use by internal team to begin development of software. This will include buying hardware and software necessary for development.

Task 7.0: Project Management

Task Summary: Identify project management and software development teams. We will specify each contributing member of the project management and software development teams and hire accordingly.

PERFORMANCE METRIC TABLE

Ra Power Management / PI: George Zviagin – **george.zviagin@RPM.solar** (510-364-3748)

Performance Metric	Date Month %total DOE 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
PM0	**09/01/15** **1** **25%**	**Technical** Baseline Performance Demo 1. Demonstrate Software v1.0: structure **Business** ID customer feedback providers 1. Identify solar developer companies who will provide voice of customer feedback on at least a quarterly basis throughout the period of performance	**Technical** Via web demo, demonstrate to EERE the ability to: 1a. generate production, cash-flow forecasts 1b. replicate a tax equity fund model, calculate the present value 1c. analyze fund under multiple scenarios 1d. define, manage and evaluate compliance with fund constraints 1e. **Business** 1. Letters sent to EERE from two solar developers in which they agree to provide customer feedback on at least a quarterly basis
	12/01/15 **4**	**(Tasks 1-3)** Software v1.1 – 1. 3 completed **Technical** 1. System access and user permissions 2. Security and data segregation features	**Technical** – Demonstrate via a web demo for EERE: . Login into platform, enter user and specify access rights . Demonstrate system response to an attempt

	30%	3. Fund setup wizard **Business** . Identify two additional solar developers who will provide customer feedback on at least a quarterly basis throughout the period of performance . Get customer feedback from first two developers on software v1.3	to connect from a non-validated user; data segregation features, and system response when an incorrect type of data is entered into the system. . Process of using the Fund Wizard to set up a new fund **Business** . Letters sent to EERE from two additional solar developers in which they agree to provide customer feedback on at least a quarterly basis 2. Demo system capability to solar

PM2	**03/01/16** **7** **20%**	**(Tasks 4-5)** Software v1.4 - 1.5 complete **Technical** . Csv upload templates, upload error detection and notification, progress meter. . Additional details at the contract level including economic analysis and individual CFs, the avoided cost of power (ACP), and the ability to define data sets used for analysis and reporting. **Business** 1. Get customer feedback from all four developers on new functionality in software v1.5	**Technical** Demonstrate, via web demo: . Screenshots of csv upload, process of upload error detection and notifications. Demonstrate progress meter in action. . Capability to incorporate additional detail at contract level, calculations for avoided cost of power (ACP), ability to define/constrain data sets used for analysis and reporting **Business** 1. Demo new system capability to solar developers through software v 1.5 and capture customer feedback. Provide notes to EERE on documenting customer feedback.
PM3	**06/01/16** **10** **15%**	**(Tasks 6-7)** Software v1.6 - 1.7 complete **Technical** . Multiple versions of actuals data + timestamps, user ability to specify a version of actuals data for a given operation 2. Generate, save, and reuse custom report templates **Business** 1. Get customer feedback from all four developers on new functionality in software v 1.7	**Technical** Via web demo, demonstrate: . Ability to retain multiple versions of actuals data + timestamps, user ability to select version of actuals data to use for a given operation. . The process of saving and reusing several different custom report templates **Business** 1. Demo new system capability to solar developers through software v 1.7 and capture customer feedback. Provide notes to EERE on documenting customer feedback.
	09/01/16	**(Task 8)** Software v 1.8 complete **Technical** 1. Pricing engine functionality	**Technical** Via web demo, demonstrate: . Pricing engine functionality

PM 4	**12** **10%**	**Business** . Get customer feedback from all four developers on new functionality in software v 1.8 . Get agreements from at least two companies for alpha testing	. EERE can access system and perform all functions described above **Business** . Get customer feedback from all four developers on new functionality in v 1.8 . Get signed agreements from at least two companies to undertake alpha testing. . Send agreements to EERE

Project Results and Discussion

Our goal for this project was to develop a software solution for one of the solar industry's most pressing needs, long-term financial asset management. This area represents a significant cost to solar developers and has a large influence on the overall cost of solar to the end user. RPM developed a product to address the specific needs of the solar industry by streamlining financial operations.

Overall this project was a tremendous success. RPM remained very close to the original schedule and we were able to complete all of the tasks on time and on budget. We believe was due to the strength of the RPM team. We have a strong development staff with many years of experience. They were able to develop an effective software creation plan with reasonable time lines. Second, our management team and support staff remained focused on the project and kept it the top priority.

As the project progressed, each task had a good mix of business and technical deliverables. Addressing technical and business progress simultaneously positioned RPM to make significant progress toward becoming successful. RPM was able to use the insight gained from the business deliverables to enhance development of the software. By the end of the project, the software had been reviewed, and feedback provided, by numerous potential customers, many of them at multiple stages of development.

Ultimately, we developed the RPM platform to a near finished state (for this version) and we onboarded RPM's first client. In addition, the business has a strong pipeline of warm leads eager to become customers. A strong software foundation and momentum from finishing the DOE SunShot program have positioned RPM to launch our product into the market.

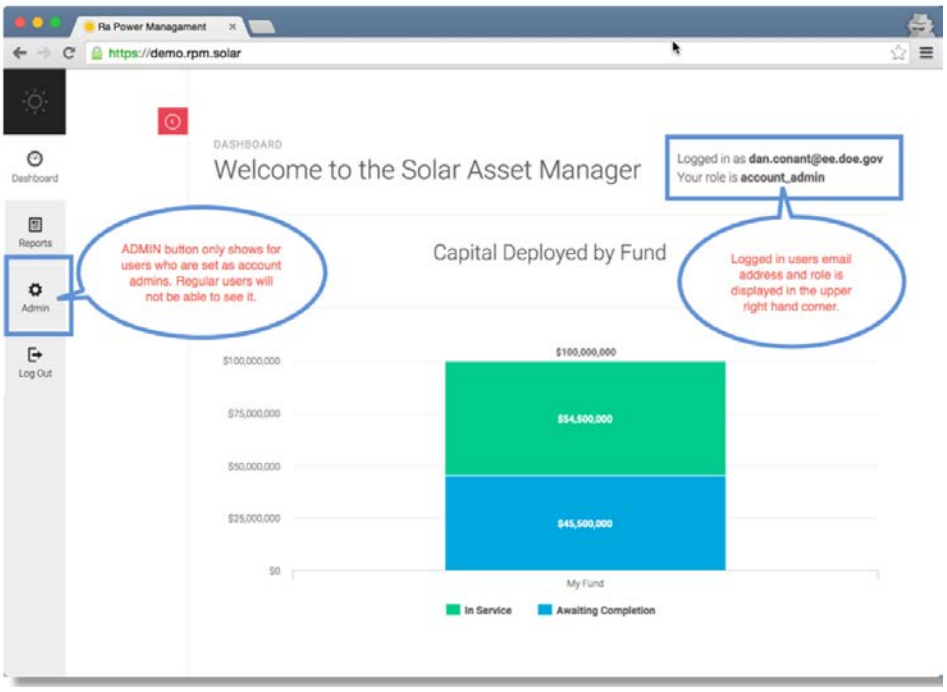
Our project results are outlined below with each subtask having an accompanying screenshot which demonstrates the functionality targeted for development of that task. If there were changes to the original task the explanation for the change and the new task will be outlined in the appropriate section.

Task 1: Manage access permission for multiple types of users

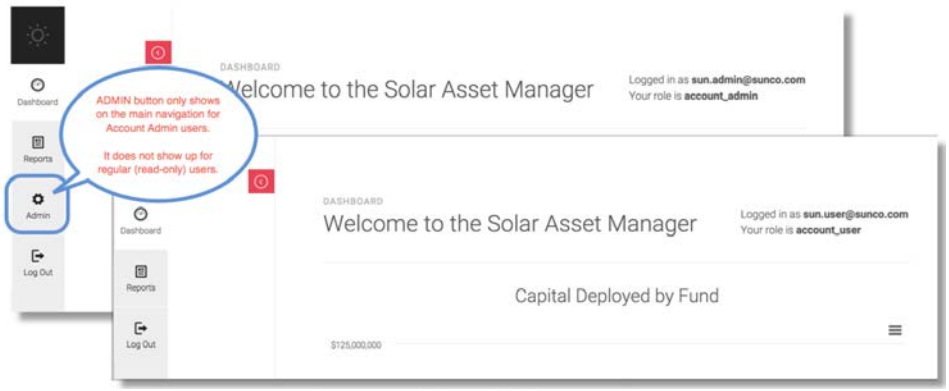
Subtask 1.1: Define access rights for each user group

Subtask 1.2: System Admin control of access rights

- Account admin users have additional permissions that allow them to manage (add, edit, and delete) funds, users and the list of investors



- You can test the account admin user rights by:
  - managing funds (create, edit, delete funds and import and manage contracts) (see instructions in step 3 below)
  - logging in a regular (read-only) user
    - log out by clicking the Log Out button on the main nav bar on the left side of the window
    - on the login page, enter the following credentials to login as a regular (read-only) user:
      1. email: **user_demo@rpm.solar**
      2. password: **hellosolar**



Task 2: Data security and segregation

Subtask 2.1: Secure infrastructure

Subtask 2.2: Validate connectivity calls to the system

Subtask 2.3: Secure data storage segregation for each client

Subtask 2.4 Import data validation

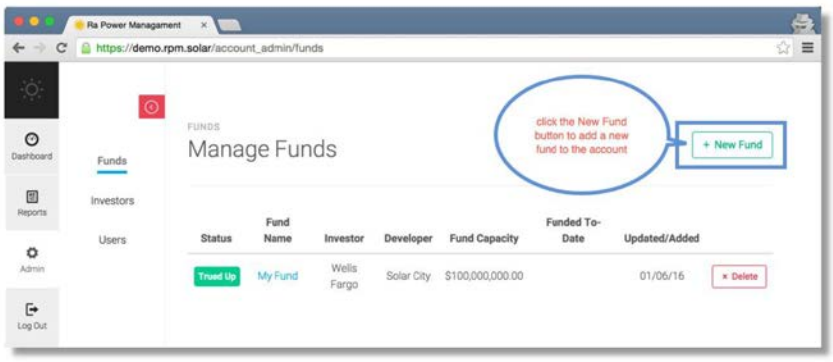
Subtask 2.5: Implement security audit and bug fix

Task 3: Fund setup wizard

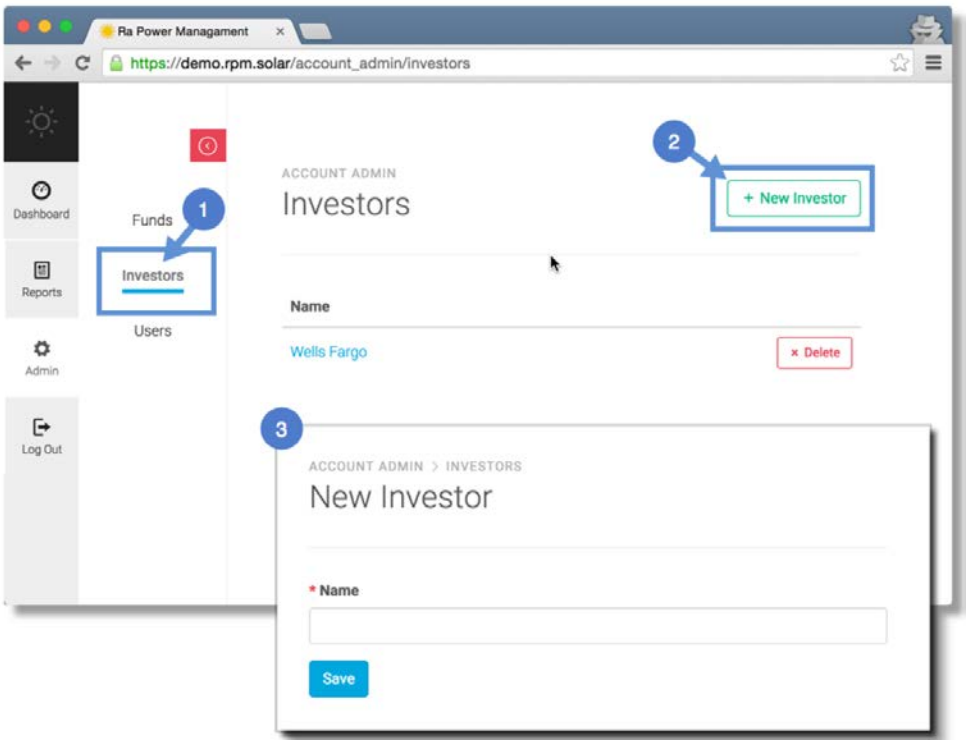
Subtask 3.1: Fund creation, modification, and associated assumptions

Subtask 3.2: Define custom fund expenses

- Then click on the **New Fund** button in the upper right hand corner of the window



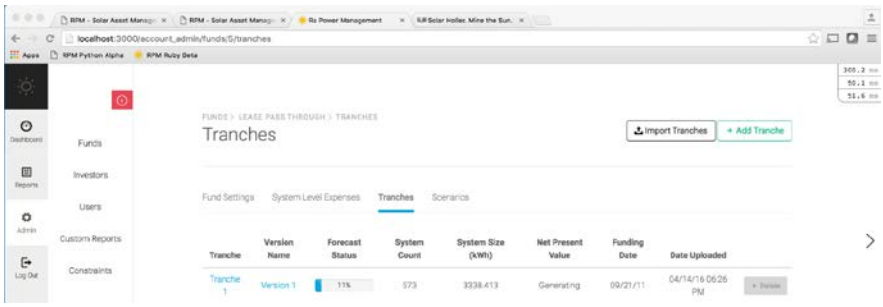
- On the New Fund page (see screenshot below) populate the fields as shown in the screenshot below:
  - Cash flow end date: please check the **Enabled?** Checkbox and enter in a date



Task 4: Data import user interface

Subtask 4.1: Connection errors

Subtask 4.2: Progress Meter



Task 5: Extend analytic and reporting functions

Subtask 5.1: Contract Level Data

Subtask 5.2: Analytics and reports for avoided cost of power (ACP)

Subtask 5.3: Define data sets for analytic operations

Task 6: Tracking the version of 'actuals' data used for analysis

Subtask 6.1: Record and store multiple versions of actuals data

Subtask 6.2: Select from multiple sets of actuals data for analysis and reports

Task 7: Report Generator menu for custom reports

Subtask 7.1 - Define and build a custom report

Subtask 7.2: Refresh customer reports

Performance Metric 3 – Technical Deliverable

Non-Core Feature #2 – Custom Reporting Views

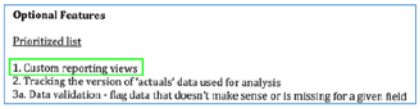
Background:

One of the defined "core" features we successfully delivered as part of PM1 was the ability to define and evaluate compliance to various constraints that can be contractually imposed on a fund by a project finance investor (see screenshot below).

VOC Meeting Notes Qualifier:

See Voice of the Customer notes from our 2nd meeting with Sunrun (part of business deliverable for PM2).

File name: *RPM – Sunrun Meeting #2 Notes_SIGNED.pdf*


Optional Features

Prioritized list

1. Custom reporting views
2. Tracking the version of 'actuals' data used for analysis
3a. Data validation - flag data that doesn't make sense or is missing for a given field

Significant Accomplishments and Conclusions

Throughout the award process we have achieved significant gains in crafting our software into a strong product all while building our business into a viable enterprise. We were able to accomplish this by working closely with potential customers and getting detailed feedback about the product and how to build a business to address clients specific needs.

The largest accomplishment was the completion of the software and securing our official first customer. These were both the main goals of this project and directly contributed to our ability to achieve success as company. Each step of the software's development we had feedback from potential clients about the software's ability to meet their needs both now and in the future. We took this information and used it to continuously improve the product.

In addition, our ability to work closely with potential clients on the development of the software has yielded great benefits. These close relationships with the customer base has gone a long way in helping our software gain traction. We plan on using a direct customer interaction and development strategy in the continued growth and sale of our software. Our product has a competitive advantage in the market because of the close relationships we build with many top solar developers.

We came across one significant challenge, closing a deal with a top 10 developer. Because of our close relationships with the user base, and encouragement from them, we underestimated the challenge to get large solar developers to convert to paying customers. This appears to be due to a few factors. First, the large developers have many layers of management, necessitating buy-in from individuals who are well insulated from the issues RPM's software addresses. Because senior leadership doesn't feel the pain of inadequate systems, our value proposition is a tougher sell. Second, some of the decision-makers believe that the problems our software addresses can be dealt with at a later time and potentially with internal solutions. These senior managers may feel that there are more urgent issues, such as increasing sales numbers or fine-tuning marketing strategies. From these experiences we see the need to improve our ability to communicate the value proposition to decision makers.

Commented [PS2]: formatting is wonky

Inventions, Patents, Publications, and Other Results

By the end of the project, we created a software product that is ready for release into a production state. This provides us with the foundation to begin the process of filing patent applications and copyright protection. We are currently working with our legal team to accomplish this. Our software is unique in how it addresses the problems facing solar asset management and we understand the importance of protecting our unique intellectual property. We plan on working closely with our legal team to develop a strong set of patent claims.

During this project, our company and product were mentioned in a few solar industry publications. Our CEO was interviewed by the Yale Clean Energy Finance Forum and the conversation became the basis for the article "RPM Software Improves Solar Asset Management" (1. *http://www.cleanenergyfinanceforum.com/2016/07/31/rpm-software-improves-solar-asset-management.)*

We were also featured in an article in PV Solar Report, "Ra Power Management: A New and Easier Way to Manage Solar Assets" (2. *http://pvsolarreport.com/ra-power-management-solar-assets/*). The article discusses our unique approach to asset management and how our product focuses on areas that no other product currently targets. The article also discusses the value proposition our product provides to solar developers.

Commented [PS3]: ditto

1. Sun, Yinong "*RPM Software Improves Solar Asset Management"* http://www.cleanenergyfinanceforum.com/2016/07/31/rpm-software-improves-solar-asset-management
2. Kuschv Aya "*Ra Power Management: A New and Easier Way to Manage Solar Assets"* http://pvsolarreport.com/ra-power-management-solar-assets/

Path Forward/Commercialization Plan

Project Results and Discussion:

Detailed Overview

Project Motivation: RPM's founder, George Zviagin, spent several years building and running the finance and asset management teams for two leading developers in the solar industry. He and his teams were challenged to manage fund deployment and reporting for internal stakeholders and external investors using tools such as custom.

SQL queries, Excel, and PowerPoint. These manual processes required significant headcount to manage the identification, cleaning, summarizing, and sharing of solar project data within the organization. Not only is this approach costly and inefficient, it is also vulnerable to human error.

Market Fit: RPM's software effectively streamlines the asset management process and drives down the overall cost of financing new solar systems and maintaining installed ones. We estimate that clients will on average save 79% on their asset management staffing costs. The software will help organizations automate the most difficult aspects of asset management, leading to increased transparency, efficiency, and reduction in human error. More importantly, our platform will help developers save money by improving their operating margins and eliminating the need for costly manual labor to act as a stop-gap measure for inadequate financial infrastructure.

A well-designed, scalable, and fully integrated solar management platform is desperately needed in order for third party financed solar to attract more capital. With the addition of solar lease securitization, the need is even greater for timely, accurate financial information for investors, auditors, and regulators. The RPM platform offers an all-in-one solution for financial asset management.

Ultimately, the RPM platform will drive down the cost of financing and managing solar assets, resulting in a lower cost of capital and lower energy costs for the end customer.

Key quantitative parameters for this innovation and its production

There are two major quantitative parameters which can be used to assess RPM's platform.

First is the amount of work one person can do on the platform. One person can manage about 5,000 solar systems manually which usually accounts for two project finance investment funds. These employees are relatively expensive and cost $150k on average per year (salary + benefits). Our platform increases worker productivity by a factor of 10 (conservative estimate, see detail below), allowing one employee the ability to manage 50,000 solar systems. This will save solar developers approximately 79% on their current asset management labor expenses.

LIFETIME COST TO MANAGE 50,000 SYSTEMS

STATUS QUO VS

FINANCE & ASSET MANAGEMENT HEADCOUNT	10 FTE / 50,000 SYSTEMS	1 FTE / 50,000 SYSTEMS
HUMAN CAPITAL	$30,000,000	$3,000,000
SOFTWARE COST	$0	$3,300,000
LIFETIME TOTAL COST	$30,000,000	$6,300,000
LIFETIME SAVINGS %		79%

	Estimated Cost Savings Using RPM		
	avg kW	5.5	
	# systems	50,000	
	$ / w	$4.50	
	$ AUM	$ 1,237,500,000.00	
50%	Project Finance needed	$ 618,750,000.00	
	avg fund	$ 100,000,000.00	
	# funds	6.1875	
	# funds rounded	6	
2	Deployment phase	$ 50,000.00	2 yrs
18	Reporting phase	$ 25,000.00	18 yrs
	1 fund lifetime cost	$ 550,000.00	
	6 funds lifetime cost	$ 3,300,000.00	
	1 FTE annual cost	$ 150,000.00	
	Years	20	
	1 FTE Lifetime Cost	$ 3,000,000.00	
	10 FTE lifetime cost	$ 30,000,000.00	
	1 FTE + software lifetime cost	$ 6,300,000.00	
	lifetime savings	79.00%	

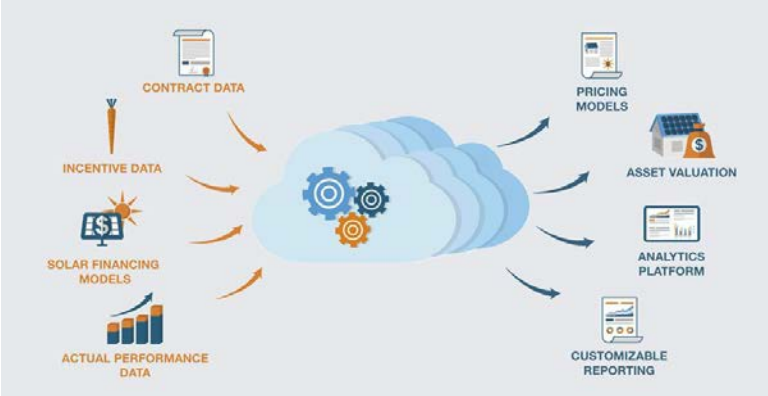
Comparison of the cost to manage 50,000 solar systems with manual labor v. with RPM's platform.

Second is RPM's ability to drive down the cost of capital for financing new solar systems. We estimate that by enabling companies to move more of their financing activities from tax equity deals to lower cost of capital options, such as securitization, we help our clients increase their profit margin by 11% (on average). This increased revenue will allow developers to lower their clients' costs, thus being more competitive in the market. The reduced cost of capital will provide additional and better financing, facilitating developer profitability.

Technical Process

Product architecture: RPM's software's technological stack is built using PostgreSQL and Ruby with a Rails framework for the back-end, and a Javascript framework for the front-end.

High level graphic depiction of RPM's software platform



Easy to understand graphic or summary of how the product is built (step by step), equipment used and methodology: Not applicable, no manufacturing involved.

Identify which processes are novel and critical to production of product: Not applicable, no manufacturing involved.

Plan of manufacturing or research facility, including visual layout: Not applicable, no manufacturing involved.

Plan for expansion or qualities that would be looked for in company to license technology to: Not applicable, RPM is planning to be the sole technology distributor.

Path to the Market

Current product capability: The RPM financial asset management platform automates and efficiently scales financial asset management and investor reporting of third-party owned solar assets. The RPM platform allows developers to automate asset/fund deployment and performance reporting requirements imposed by investors and frees them up to focus on the business of selling and developing projects.

RPM's product is currently the first production version of our platform. The software has been through both alpha and beta testing and has been released in a production state. We are able to bring new clients on to the platform and run the software on an ongoing basis including supporting clients' daily operational needs. We see this as the basis for an evolving software product that services more facets of the solar operations process, such as pricing proposals and GAAP fund accounting.

Is it commercially ready? Yes.

How will customers be engaged in the future? Next 12 months? Next 5 years?

RPM currently offers two customer tiers: Enterprise and Explorer. Enterprise is our top tier, designed for large solar developers, and includes extensive onboarding services such as weekly meetings to assist with training and system adoption. For Enterprise customers, the onboarding process begins with an initial meeting with the client to scope their business needs and determine which databases or other systems they would like to connect to RPM's platform. Enterprise customers have priority in contracting with RPM for custom modules.

All clients are provided with a point of contact (their account manager) for any issues or questions that may arise. They are also provided with training and onboarding resources. We will have regular feedback sessions with clients to learn how we can better meet their needs.

Our Explorer clients are likely to be smaller firms. The product cost will be much lower and they will most likely not need the same degree of customization that the larger solar developers will. We are still in the process of rolling out the Explorer Tier.

We provide IT and product support throughout normal business hours. As RPM grows, we will have dedicated customer support 7 days per week.

Who do you envision as Customer #1 and how will you expand?

Shinbone Labs is our first paying customer. We plan to expand by:

- demonstrating the value of RPM to our beta users and converting them to paying customers;
- encouraging more feedback participants to try a no-cost beta trial and then become customers; and
- continuing to provide demos of the software as it acquires new features to all of our prospects.

We plan to expand our prospects list by:

- Continuing to leverage our strong relationships with all large US solar developers;
- Revising the RPM website to reflect the current stage of the company and software;
- Attending solar trade shows;
- Partnering with Genability, and Mercatus and cross-marketing
- Generating press in solar and green oriented publications and blogs such as GreenTech Media, Yale Clean Energy Finance Forum, Green Energy News, Energy Management Association, Microgrid Media, Daily Energy Insider and more.

After establishing credibility with the large developers, we will market directly to mid and small size developers using the channels described above.

List number of employees you anticipate for the next 5 years.

Over the next two years we anticipate our team to include:

- Executive staff – CEO, COO, CTO, and Executive VP of Sales
- Software engineers – A team of 6
- Sales – 4 sales staff
- Marketing - 1 Marketing Manager
- Operations - 3 Operations staff

Over the next 3 years we foresee having most staffing increases in software development and sales, along with a few additional support staff:

- Executive staff - CFO
- Software engineers – 4 additional staff
- Sales – 1 sales staff and 2 sales support staff

Commented [PS4]: multiple fonts

- Operations - 4 Operations staff

Financial Analysis

Detailed financial assessment of CapEx, broken down by equipment and supplies:

Aside from computer equipment, we do not anticipate any significant capital expenditures.

Compare to leading competitors future projections if possible:

The few companies doing something similar, though not the same, are very early stage and their future projections are not available.

Pareto Diagram of costs: See projections below.

Expected operational expenses and revenue analysis: See projections below.

Current production costs: See projections below.

Production costs at a commercially relevant scale: See projections below.

List your cost, the price you will charge customers, and your sales volume projects: See projections below.

Risks and mitigations: List the most critical business risks you see and you mitigations strategies.

Risk	Mitigation
Businesses are hard pressed to make time to adopt this solution, even though they readily admit it will save them time	RPM is addressing this by offering to help with data transfer and encouraging customers to start with a smaller portfolio so that they can see the value most quickly and easily

Larger companies may want to build their own software	Those developers we've talked to say that this desire is rarely acted upon in a timely manner. Once we get one large customer and demonstrate our credibility, the value prop for of acquiring our software will be much stronger

Background Information

Target Market and Segmentation

Ra Power Management's target market consists of solar developers and investors. Our initial strategy is to target large solar developers (i.e. SolarCity, SunRun, SunPower, Vivint, Sungevity, SunEdison, OneRoof, etc). They have the greatest need due to the high volume of deals and pressure from large investors for better transparency on asset performance. Additionally, these organizations are falling under increased pressure to reduce costs.

Our priorities with other market segments are as follows:

- Large solar developers in the U.S. market
- Small/medium developers in the U.S. market
- Small/medium developers in international markets
- Project finance investors (owners of solar asset portfolios)
- Community Solar Market