

Regional Solar Initiative

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Prepared for MAPC Municipalities

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Executive Summary

The purpose of the Regional Solar Initiative was to assess and facilitate the regional procurement of solar energy management services (EMS) for multiple municipalities and sites in the MAPC region.

Third-party ownership models for developing renewable energy projects present a cost-effective option for communities that want to produce renewable energy locally, but do not have the resources to purchase generation systems outright. Under this project, MAPC identified communities that were interested in hosting solar power generation systems on municipally-owned rooftops, landfills, and/or other large ground-based sites to assess and implement options for developing these sites on a regional basis. MAPC also contracted with an outside consultant, the Cadmus Group, for professional support throughout the course of the project. After researching and evaluating a number of potential options, MAPC decided to issue a Request for Qualifications (RFQ) for solar EMS on behalf of interested communities. 17 municipalities submitted letters of interest to participate.

M.G.L. Ch. 25A §11i allows public agencies seeking to host a renewable energy generation facility to issue a Request for Qualifications (RFQ) for renewable energy developers that are qualified in Massachusetts to provide solar EMS. The procurement process identifies developers that can finance, install, own, operate and maintain the renewable energy generation facility. To complete a regional procurement for such services, MAPC assembled representatives from the participating municipalities to form a Solar Selection Committee to solicit a single RFQ and select a professional solar developer to provide comprehensive solar installation services that require no upfront investment on the part of each municipality. Following the completion of the procurement process, MAPC will now execute a memorandum of understanding with the selected vendor including a template contract for use by each of the participating municipalities. Each participating municipality is now responsible for engaging the services of the selected vendor independently.

The communities participating in this project benefited associated with membership to a peer group working on similar projects throughout the region, which can be asked and answer questions, share success stories and concerns, and generally build confidence and momentum for individual projects. Quantitatively, the 17 municipalities that also participated in the regional solar RFQ gained the benefit of more competitive bids associated with a group solicitation, as well as save on the administrative costs, borne by MAPC through the support of DLTA funding.

Step 1: Regional Solar Services Consultant

MAPC issued a Solicitation for Quotes to consultants on the state contract, PRF46, for a Regional Solar Services Consultant. The lowest responsive Statement of Quotes received was from the Cadmus Group.

MAPC negotiated a contract and scope of work with Cadmus to accomplish the following tasks:

Task #1: Prep work - Scoping & Planning

- Cadmus will attend a kick-off meeting with MAPC and participating MAPC municipalities
- Camus and MAPC will finalize scope and work plan for Regional Solar project
- Cadmus will research and provide examples of similar efforts undertaken by other Massachusetts RPAs and municipalities

Task #2: Develop Request for Qualifications (RFQ) for a professional solar developer(s)

- MAPC will create a first draft of the RFQ using RFQs created by other Massachusetts RPAs and municipalities as a basis
- Cadmus will review RFQ documents prepared by MAPC and make edits as necessary
- MAPC will collect site information from participating municipalities to include in the RFQ
- MAPC and Cadmus will work together to determine evaluation criteria for the RFQ
- MAPC will notify the Department of Energy Resources of intent, and issue the RFQ

<u>Task #3: Provide expertise and recommendations throughout the solar developer Proposal</u> <u>Review, Interview and Selection process</u>

- If deemed necessary to the process of evaluation, MAPC and Cadmus will host a pre-bid conference for the solar developer RFQ
- MAPC will assemble a Solar Selection Committee, comprised of municipal energy leaders, in order to introduce the work and make the process as transparent as possible. MAPC anticipates that responses to the RFQ will be distributed to the Solar Selection Committee at an initial meeting, and reviewed and scored at a second meeting. The top 3 choices will be interviewed during a group session, and the final selection presented at a fourth meeting.
- MAPC will be responsible for responding to interested parties and notifying the final candidate.
- Cadmus will attend and participate in meetings of the Solar Selection Committee, provide guidance during the development of evaluation criteria, support the Committee's review and evaluation of proposals, and apply its experience to selection and negotiations.

Task #4: Participate in events and local briefings

• Cadmus and MAPC will schedule individual local briefings with MAPC participating municipalities to explain solar basics and the procurement process to local staff and elected officials

• Cadmus and MAPC will schedule educational events for all MAPC participating municipalities on more advanced topics, TBD

Task #5: Provide owner's agent support if requested by MAPC participating municipalities

 Municipalities can secure individual owner's agent support from Cadmus at rates established in Cadmus's MAPC contract to avoid an additional services procurement. Municipalities alternatively can choose to procure their own owner's agent and/or use their own legal counsel as needed.

Alternative (non-DLTA) funding was identified to pay for Cadmus' time. Several communities participating in the Regional Solar Initiative opted to contribute their own funds to secure Cadmus' Owner's Agent services outside of the services included in the Regional Solar Initiative, including the Town of Belmont and the City of Melrose.

MAPC worked closely with staff at Cadmus to complete the tasks outlined in the scope of work, and described further in this report.

Step 2: Regional Solar RFQ

With support from Cadmus, MAPC ultimately decided to issue an RFQ for Solar Energy Management Services (EMS) pursuant to MGL Ch. 25A, §11i. The full RFQ can be found in Appendix 2. This was a qualifications-based solicitation intended to identify one or more qualified solar developers who would, after selection, be eligible to enter into comprehensive solar EMS contracts with participating municipalities. A solar EMS contract is a long-term, up to 20-year agreement that includes: PV system design, financing, installation, operations, maintenance, system removal, long-term lease of public space, purchase of PV electricity, and a system performance guarantee. Issuing a solicitation under MGL Ch. 25A, §11i allows public entities in MA to procure these services as a package from a single developer (as opposed to developing a solar project under a public works contract).

17 communities opted to be listed in the RFQ, including:

Belmont	Beverly	Boxborough	Brookline
Chelsea	Hudson	Lincoln	Marlborough
Medford	Medway	Melrose	Reading
Sherborn	Wayland	Weston	Weymouth

Winthrop

Being listed in the RFQ was not a binding commitment to bind any individual municipality to entering into any agreement with the selected developer(s), but rather meant that each municipality would meet public procurement requirements and would be eligible to pursue such an agreement if it decided to do so after the procurement was complete.

The RFQ was issued with the following timeline:

Notification to the DOER:	September 11, 2012
RFQ Published in Central Register and Advertised:	September 26, 2012
Mandatory Pre-bid Conference:	October 11, 2012
Final Inquiries Due:	October 19, 2012
Responses Due:	October 26, 2012
Anticipated Interviews:	November 28-30, 2012
Anticipated Selection for Negotiations:	By December 31, 2012

MAPC posted and advertised the solicitation on Comm-PASS and the MAPC website, as well as distributed it to the membership of the Northeast chapter of the American Solar Energy Society, the Northeast Sustainable Energy Association (NESEA). Four (4) addenda were posted. MAPC also held a mandatory pre-bid conference at the Cadmus Group's offices in Waltham, MA on October 11, 2012.

13 responses to the RFQ were ultimately received by the deadline on October 26, 2012, including:

- 1. Ameresco
- 2. American Capital Energy
- 3. BlueWave/Borrego/EDF
- 4. Broadway Electrical
- 5. EMSA Solar
- 6. groSolar
- 7. IRC Roof Management Services
- 8. Nexamp
- 9. RGS Energy
- 10. Siemens
- 11. SolSolution
- 12. SunEdison
- 13. Vanguard Energy Partners

Step 3: Regional Solar Selection Committee

From the group of 17 communities participating in the Regional Solar RFQ, MAPC solicited volunteers to serve on a Regional Solar Selection Committee. MAPC and the Cadmus Group supported the selection process, but these community representatives were responsible for ultimately making the final recommendation for selection.

Committee participants were asked to comply with the following requirements and timeline:

- Attend <u>all</u> meetings of the Regional Solar Selection Committee. There will be a minimum of five (5) and a maximum of seven (7) meetings of the Committee, during which proposals will be discussed and ranked, top candidates interviewed, and final decisions made. Universal participation in all meetings will ensure that all members have a common and shared base of information to guide their decision making.
- Provide advance notice of extenuating circumstances that preclude attending any meeting. If for any reason a Committee member is unable to attend a Regional Solar Selection Committee meeting, the member should provide MAPC staff with as much advance notice as possible. If two members of the Regional Solar Selection Committee are unable to attend a meeting, the meeting will be rescheduled.
- Be responsive to communications from MAPC, indicating any preferred method of communication. Committee members must read and respond to emails from MAPC staff in a timely manner or make it known if they prefer to be contacted by phone. All will be asked to confirm the best address and/or number where they can be reached to ensure that we can readily notify them of changes to our schedule and that they can respond to communications within two business days.
- Personally review responses to the RFQ and come prepared to discuss material at meetings. Participants of the Regional Solar Selection Committee are expected to be engaged throughout the entire process and should avoid deferring review or decision-making responsibilities to others. Committee members will not be permitted to send substitutes to meetings. The bulk of time needed to review material is anticipated to take place in October and November 2012. Top candidate interviews are anticipated to take place in late November or early December of 2012.
- Maintain confidentiality and respect for the procurement process. Selection Committee members are expected to refrain from sharing proposals or specific vendor information with persons not on the Selection Committee. Off-the-record communication with vendors is considered to be inappropriate as it could be perceived to provide unfair advantage to a vendor. Names of Selection Committee members will be kept confidential to avoid inappropriate communication from vendors. All questions from both Selection Committee members and vendors should be directed through MAPC.

Regional Solar Selection Committee Meeting Schedule & Work Plan			
Date/Time	Location	Description	
Thursday, October 25	MAPC	Meeting 1: MAPC will review the selection process, Selection	
10am-12pm	(Boston)	Committee expectations and confidentiality requirements.	
Monday, October 29 –	Municipal	MAPC staff will physically deliver copies of the proposals to	
Tuesday, October 30	offices	the offices of each Selection Committee member.	
Monday, October 29 –	Municipal	Proposal review period	
Thursday, November 8	offices	Proposal review period	
Thursday, November 8	MARC	Meeting 2: General discussion of proposals. Selection	
10:30am-12:30pm	(Boston)	Committee will create a list of questions that MAPC will	
		submit to vendors in written form.	
Thursday, November 8 –	n/a	One (1) week period for vendors to respond to written	
Thursday, November 15	n/u	questions.	
Thursday, November 15	MAPC	Meeting 3: Selection Committee reviews and discusses	
10:30am-12:30pm	(Boston)	answers to written questions; creates shortlist	
Wednesday, November 28	MAPC	Meeting 5: Interviews with shortlist candidates scheduled.	
ALL DAY	(Boston)		
Tuesday, December 4	Conference	erence Monting 7. Confirmation of final recommendation	
10:30am-12:30pm	call		

Committee members were also given the following tips for reviewing proposals:

- 1. Read one proposal closely from cover-to-cover to get a sense of the format. Common themes will emerge thereafter.
- 2. Try to identify major questions or red flags as you read. Write them down and bring them to discuss with the larger group.
- 3. **Read from your community's point of view.** What are you looking for in a developer? Does a response meet your needs?
- 4. Selection Committee members may want to focus on the answers to the questions asked in the RFQ Response Format Template. In particular:
 - a. In the Management Capabilities and Project Experience categories, consider:
 - i. Do they have experience with public projects in Massachusetts? Do these projects match the projects your community wants to develop?
 - ii. Do they have roofing experience and is this important to your community (i.e., do you have old roofs that will need to be replaced as part of a solar project)?
 - iii. Do they have experience working with municipal utilities, and is that important to you?
 - b. In the Project Approach category, consider:
 - i. Do they offer co-benefits when developing a project, such as educational programs? Which, if any, of these are important to you?

- ii. Do they have a clear understanding of MA-specific conditions and project types? (Tip: Look for language such as "behind the meter" "100% net metering")
- iii. What risk factors do they describe, and do they require the municipality to assume certain risks? Is your community risk-averse or willing to assume some risk for better project economics?
- c. In the Method for Guaranteeing Savings category, consider:
 - i. How do they calculate the true-up if savings aren't realized? (Tip: A red flag is if a developer puts a cap on the amount they need to pay out if electricity prices go up significantly.)
- d. In the Financing Capabilities and Pricing Methodology categories, consider:
 - i. Are they solely a solar developer or are they a solar group within a larger company? A solar developer may have more knowledge or experience with MA-specific, relevant projects, but a bigger company may have deeper pockets. Will your community have a strong preference towards one type of developer?
 - ii. What are their assumptions about the SREC market? Are they playing the spot market or have they secured long-term information on SREC "strip" contracts? (Tip: A red flag is if they assume something like "SRECs will stay above \$300/SREC for 10 years." If they've done their research and asked for pricing from a broker, the assumptions will look more like \$200/SREC declining to \$100/SREC over a 10 year period.)

The Selection Committee reviewed responses, interviewed top-ranked candidates, and made a final recommendation for selection, at which point MAPC staff (with support from Cadmus) was responsible for drafting and negotiating a memorandum of understanding and template contract with the top-ranked developer.

Step 4: Workshop – Solar Contracting Overview

In order to make sure that all communities involved fully understood the process and capabilities of a solar energy management services (EMS) contract, which they would be able to enter into after selection of a developer through the regional solar RFQ, MAPC worked with Cadmus to develop an FAQ document and put on a solar contracting basics workshop. The workshop and the FAQ document were made available to the public and advertised widely to MAPC region municipalities and public entities.



Workshop	: Solar Contracting Basics
When	Dear Amanda,
Thursday December 13, 2012 from 10:30 AM to 12:00 PM EST Add to Calendar	Please join us for a Solar Contracting Basics workshop on Thursday, December 13, 2012.
Where The Cadmus Group 100 5th Ave Suite 100	The workshop will be led by The Cadmus Group and will cover the basics of solar Energy Management Services (SEMS) contracts, also known as Power Purchase Agreements (PPAs), and SEMS negotiation strategies and recommendations for municipalities.
Waltham, MA 02451	In addition to reviewing SEMS contract fundamentals, specific topics to be addressed may include:
Cat stings Park 117 Main St 2012 Microsoft Corporation © 2012 Microsoft Corporation © 2012 Microsoft Corporation © 2012 Notia	 Estimating the economic benefits of a proposed SEMS project; Contract structure, terms, and provisions; Strategies for maximizing economic benefit to the city or town; Potential project risks (e.g., developer default, net metering risk) and strategies for mitigating project risks; and Common negotiation pitfalls and strategies for avoiding these challenges.
Driving Directions	Communities considering a SEMS/PPA project in the coming year are encouraged to invite those key stakeholders who will ultimately be involved in a solar contract negotiation and approval process, such as procurement staff and general counsel.
	This workshop is free and open to the public. It represents the culminating event of the 2012 MAPC Regional Solar Initiative (funded under the 2012 District Local Technical Assistance program). Participation in the Regional Solar Initiative is not required to attend.

The workshop was well-attended with over 40 RSVPs. MAPC and Cadmus also prepared and distributed the following FAQ document:

MEMORANDUM

DATE:	November 14, 2012
TO:	MAPC Municipalities participating in MAPC's Regional Solar Initiative
FROM:	Helen Aki (MAPC) and Erin Sweet (The Cadmus Group, Inc.)
RE:	MAPC's Regional Solar Initiative RFQ: Frequently Asked Questions

On September 26, 2012, the Metropolitan Area Planning Council (MAPC) announced the release of a Request for Qualifications (RFQ) for Solar Energy Management Services (SEMS). Through this RFQ, MAPC aims to prequalify SEMS vendor(s) for the seventeen municipalities participating in this regional solar initiative. The Cadmus Group, Inc. (Cadmus), MAPC's regional solar services consultant, provides local briefings to participating municipalities.

This memorandum addresses some of the questions frequently asked by participating municipalities, including questions related to SEMS contracts, SEMS procurement, the solar photovoltaic (PV) development process, contract negotiations, and related topics.

Commonly Used Acronyms		
DOER	Department of Energy Resources	
kW	kilowatt	
kWh	kilowatt-hour	
MAPC	Metropolitan Area Planning	
	Council	
MGL	Massachusetts General Law	
MOU	Memorandum of Understanding	
NMC	Net Metering Credits	
PILOT	Payment in Lieu of Tax	
PPA	Power Purchase Agreement	
PV	Photovoltaic	
RFP	Request for Proposals	
RFQ	Request for Qualifications	
SEMS	Solar Energy Management	
	Services	
SREC	Solar Renewable Energy Credit	

What are Solar Energy Management Services Contracts?

MAPC is conducting this solicitation for Solar Energy Management Services (SEMS) pursuant to M.G.L. c. 25A §11(i). Under M.G.L. c. 25A §11(i), Massachusetts public entities lease public space, such as a public school roof, for the installation of a third-party owned solar PV system and enter

into a 20-year contract for the purchase of electricity produced by the system (the long-term power purchase component of a SEMS agreement is called a Power Purchase Agreement, or PPA). That is, public entities in Massachusetts can use M.G.L. c. 25A §11(i) to procure a SEMS contract for the lease of public space, PV system construction, and a PPA through a single, streamlined solicitation process.¹

During the contract term, the solar developer owns, operates, maintains, and ultimately removes the PV system. The public entity hosts the PV system and purchases all of the electricity produced according to a known rate schedule.

In addition to streamlining procurement, M.G.L. c. 25A §11(i) requires that SEMS vendors provide public entities with a performance guarantee. The developer guarantees that the PV system will produce a certain amount of electricity in each contract year; if the PV system underperforms, the developer is responsible for compensating the municipality for system the underperformance.²

SEMS contracts allow public entities to: (1) benefit from solar incentives available only to taxable entities; (2) lock in a favorable electricity rate for 20 years; and (3) realize the financial and other benefits of solar PV without responsibility for system operations, maintenance, and removal. Under M.G.L. c. 25A, municipalities can also purchase PV systems, if they choose to do so.

How does the Developer Make Money on a SEMS Project?

The developer benefits from three primary sources of revenue – the sale of Solar Renewable Energy Credits (SRECs), sale of PV electricity, and federal tax benefits.

- Sale of SRECs to Utilities, Competitive Electricity Suppliers, SREC Brokers, or Others. SRECs
 are a tradable commodity created alongside PV electricity. For every 1,000 kilowatthours (kWh) of PV electricity, one SREC is minted. In typical SEMS contracts in
 Massachusetts, the solar developer owns the SRECs produced by the system and the
 municipality benefits from a reduced SEMS rate.³ SRECs are a valuable commodity, and
 they are the developer's primary source of revenue; however, the SREC market is volatile.
 If the developer owns the SRECs from a project, they also take on the SREC market risk.
- 2. Sale of Electricity to the Municipality. The developer's smaller, but more stable, source of revenue is from the sale of PV electricity to the municipality. Selling electricity to a credit-worthy buyer, like a municipality, involves much less risk than the SREC sales.
- 3. Federal Tax Benefits. The developer can also benefit from a federal 30% tax credit and

¹ Whereas M.G.L. c. 25A §11(i) outlines the process for a qualifications based selection process, M.G.L. c. 25A §11(c) allows for price-based selection through a Request for Proposals (RFP) process.

 $^{^2}$ In any contract year that the PV system output falls short of the guaranteed output for that year, the developer pays the municipality the difference between the retail electricity rate and the PPA rate for each kilowatt-hour of underperformance.

³ The Massachusetts Renewable Portfolio Standard Solar Carve Out program created a market for SRECs by mandating that regulated utilities and competitive electricity suppliers purchase these commodities.

accelerated depreciation. These benefits help recover the capital the developer has invested in the project.

What is the Metropolitan Area Planning Council Regional Solar Initiative?

Incentives available for solar energy projects have led to a rapid increase in installed solar capacity in Massachusetts in recent years. State incentive programs such as the Solar Carve Out and virtual net metering have allowed solar developers to offer SEMS contracts at no upfront cost, and dozens of Massachusetts cities and towns have entered into these agreements. Many municipalities, however, struggle to evaluate and compare developers' offers of "free solar" and distinguish qualified, reliable firms from those that present a higher risk. As a result, many cities and towns have refrained from moving forward with a SEMS contract due to the difficulty of selecting a qualified vendor.

The Metropolitan Area Planning Council (MAPC) is facilitating a regional procurement of SEMS on behalf of 17 municipalities in the MAPC region. Assisted by Cadmus, MAPC released an RFQ for developers interested in implementing SEMS projects on publicly-owned buildings and/or land within participating municipalities. MAPC is assembling a representative selection committee to select a solar developer to provide comprehensive SEMS at no upfront cost to participating municipalities. Following the completion of the procurement process, MAPC will execute a memorandum of understanding (MOU) with the selected developer and provide template contracts for use by participating municipalities. Participating municipalities would then be responsible for engaging the services of the selected developer independently, if they chose to pursue a project.

By aggregating 17 municipalities in a single solicitation, drafting the RFQ documents, and facilitating the proposal evaluation process, MAPC will help secure qualified developers and competitive rates. Furthermore, individual participants may gain confidence and momentum from the exchange of information, successes, questions, and concerns among peers.

What is Cadmus' Role in the MAPC Regional Solar Initiative?

Cadmus, MAPC's regional solar services consultant, is a prequalified vendor of energy and environmental consulting services for Massachusetts public entities per statewide contract PRF46. Cadmus' services were obtained by MAPC through a three-quote process under this statewide contract.

Cadmus has supported MAPC with the conceptual design, drafting, and release of the RFQ. Cadmus staff will facilitate the proposal evaluation process; however, Cadmus will not have a vote on the selection committee. Rather, community representatives will be responsible for selecting the most qualified respondent.

Cadmus is available for local briefings with participating municipalities by request. These local briefings help support participation in the regional solar initiative by driving local conversations about solar PV and SEMS contracts and proactively addressing stakeholders' questions and concerns.

MAPC's contract with Cadmus allows the 17 communities listed in the RFQ to contract with MAPC for Cadmus' services at pre-negotiated hourly rates. Participating communities interested in retaining Cadmus' services as an owner's agent outside of the procurement/local briefing should provide a scope of work and not-to-exceed budget and contact Helen Aki at HAki@mapc.org. Other communities can access Cadmus' energy and environmental consulting services through statewide contract PRF46.

How do Participants Get a Price and Scope of Work from the Selected Developer(s)?

MAPC will sign an MOU with the selected developer(s). The MOU will dictate the final terms of the negotiation process between the developer(s) and municipalities. It will require, at minimum, that all municipalities that seek to do business with the developer are treated equally.

Once the MOU is executed, participating municipalities can approach a developer(s), following the terms of the MOU, for a scope of work and price proposal. The developer(s) will conduct site assessments and preliminary engineering studies and provide this information to the municipality within the timeframe outlined in the MOU.

The scope of work, price, and SEMS contract terms are finalized in the contract negotiations phase. The developer may require a period of exclusivity for contract negotiations, given the detailed engineering studies necessary to confirm feasibility and finalize project scope and price.

What are the Potential Benefits of SEMS Contracts to Municipalities?

Municipalities can save on electricity costs and hedge against electricity price volatility through SEMS contracts due to: (1) the low per kilowatt-hour rate of electricity produced by the PV system, and (2) the price stability afforded by SEMS contract structure.

Ideally, the per-kWh rate paid for electricity from the PV system is less than the per kWh rate for electricity from the grid. For example, a municipality may pay \$0.12 per kWh for delivered electricity at large commercial buildings. However, many communities have received quotes for SEMS rates at or near \$0.10 per kWh of electricity produced by the PV system.

Also, SEMS contracts are typically structured according to a known rate schedule across the contract term. For example, a municipality may pay \$0.10 per kWh of electricity produced by the PV system in the first contract year, and the per-kWh price will escalate at two percent each year for 20 years.

What is Net Metering?

Net metering is a Massachusetts incentive program that allows customers with a solar PV system to receive a credit from the utility when the system produces more power than is needed at the project site. Excess power is exported to the grid, the utility meter effectively spins backward, and the customer is credited at near retail rate for the electricity sent on to the grid.

Net metering credits can either be applied to the host customer's (here, the municipality) account or the host customer can allocate net metering credits to different accounts. The latter approach, called virtual net metering, allows PV generation in one location to offset electricity costs at another location. For example, net metering credits produced by a PV system atop a municipal building can be assigned either to any combination of the following, as long as the accounts are in the same utility service territory and ISO New England load zone: (1) the building's utility account; (2) to the municipality's other utility accounts; (3) any other utility accounts.

Virtual net metering is essential to the economics of most landfill solar PV projects in Massachusetts, since there is typically little or no on-site load to monetize all of the net metering credits created by the PV project. See below.

How can Participants' Estimate the Anticipated Economic Benefits SEMS Project?

There are two distinct scenarios for interconnecting a solar PV system with the grid. How the economic benefits of a SEMS project are calculated is based on the interconnection configuration.

 Behind-the-Meter. This approach is commonly used where there is on-site load (e.g., school, waste water treatment facility). The PV system is interconnected behind the facility's existing meter. Electricity from the PV system directly serves the on-site load. As a result, the facility uses less electricity from the grid. Figure 1 shows the total monthly electricity costs at a hypothetical municipal building before and after a PV installation in a behindthe-meter scenario.



Figure 1: Total Monthly Electricity Costs Before and After Solar PV, Behind-the-Meter Scenario

Anticipated savings are calculated using the following formulas:

Total First Year Net Savings = Total Estimated kWh Output * Per kWh Savings

Virtual Net Metering. This interconnection configuration is used where there is little or no on-site load (e.g., landfill solar project); however, it can also be used where there is on-site load (e.g., public school) and the economics for this configuration are typically more advantageous than for the behind-the-meter alternative. The PV system is interconnected behind a new meter serving the PV system's inverter. Rather than serving the on-site load, if any, the electricity produced by the PV system is sent back to the local distribution grid. Figure 2 shows the total monthly electricity costs at a hypothetical municipal building before and after a PV installation in a 100% net metering scenario.





Anticipated savings are calculated using the following formulas:

Net Value of Credit = Net Metering Rate – SEMS Rate

Total First Year Net Savings = Total Estimated kWh Output * Net Value of Credit

What is the Potential for Lease Revenue from SEMS Project under M.G.L. c. 25A §11(i)?

As noted above, Massachusetts public entities can use M.G.L. c. 25A §11(i) to procure a SEMS contract for the lease of public space, PV system construction, and PPA through a single, streamlined solicitation process. Ideally, the power purchase component of an SEMS project will create value for the municipality through electricity cost savings; that is, the SEMS rate paid is less than the grid electricity rate.

Municipalities seeking a more predictable revenue stream, however, can negotiate lease payments (or a Payment in Lieu of Taxes, discussed below). As lease revenue increases, the developer's costs increase and the SEMS rate will increase accordingly. For example, in the absence of lease payments, a developer may propose a SEMS rate of \$0.10 per kWh to a municipality for a SEMS project at the local high school. If the municipality requires an annual lease payment of \$10,000, the developer might propose a SEMS rate of \$0.12 per kWh to compensate for the cost of the annual lease payment.

The certainty provided by lease revenue is appealing; however, municipalities should be wary of agreeing to an SEMS rate that may exceed the grid electricity rate. For example, if the municipality in the second scenario above pays \$0.13 per kWh for electricity at the high school, a decrease in the grid electricity rate of \$0.01 per kWh or more would mean that the municipality pays more for each kWh produced by the PV system than it would for electricity from the grid (i.e., the municipality pays more for each kWh produced by the PV system than it would if the municipality had not entered into the SEMS contract), thereby offsetting the lease revenue. The final SEMS contract price structure should reflect the level of risk that the municipality is willing to assume with regard to electricity price trends.

Are Solar PV Projects Installed Under this Initiative Subject to Property Tax?

Solar PV projects installed on public land, such as municipal landfills, by third-party for-profit entities are subject to local property taxes.⁴ As an alternative, participants may negotiate a Payment in Lieu of Tax (PILOT), if the system owner is a generation company or wholesale generation company (see M.G.L. c.164, §1, Definitions).

Property taxes are assessed by the municipality to the lessee under M.G.L. c.59, §29(b). From The Guide to Developing Solar Photovoltaics at Massachusetts Landfills:⁵

The solar property will either be assessed as personal property or as part of the real estate upon which it is sited, depending on the particular configuration of the array. If the array is specifically designed for the parcel, likely to remain on the parcel for its useful life, or significantly attached to the real estate it will be assessed as part of the realty. If the array is easily movable and panels may be swapped out periodically or transferred to a different site, it may be taxable as personal property... Whether assessed as personal property or as part of the real estate, the tax rate for the property would be the same; i.e. at the municipality's single tax rate, or at the commercial tax rate if the municipality has a split rate, since the property would be used commercially to produce electricity.

Per M.G.L. c.59, §38H (b), a PILOT agreement may be negotiated as an alternative to property taxes. Here, the participant and developer negotiate a valuation or tax payment structure and PILOT term that reasonably approximate the required taxes over the term of the SEMS agreement. PILOT agreements provide the both the developer and the municipality certainty with regard to property taxes.

Comprehensive guidance from the Department of Revenue on assessing property taxes against SEMS projects is currently unavailable. The resulting uncertainty has stalled or halted some solar SEMS projects. To prevent property tax uncertainties from slowing project progress, participants should broach this topic early in SEMS negotiations. The local board of assessors should be consulted, as tax rates will vary by municipality.

For more information, contact the Massachusetts Department of Revenue at 617-626-2400.

How Can Participants Navigate the Potential SEMS Contract Risks?

A SEMS is an energy management services contract, not a public works contract. These contracts are relatively new in Massachusetts, and some participating municipalities may not have any experience with this type of contract. Participating municipalities should consult their in-house or

⁴ M.G.L. c.59, §5(45) provides a property tax exemption for solar and wind energy systems; however, this exemption does not apply to privately-owned, publicly-sited projects.

⁵ Massachusetts Department of Energy Resources. The Guide to Developing Solar Photovoltaics at Massachusetts Landfills. Available at: <u>http://www.mass.gov/eea/docs/doer/green-communities/pubs-</u> reports/pvlandfillguide.pdf

outside counsel about their experience negotiating solar SEMS contracts. Even without specific SEMS experience, Counsel will have expertise with important legalese, such as indemnification. Cadmus is also available to assist participating municipalities.

Risk protection measures, such as decommissioning assurance bonds, may increase costs; other may be cost prohibitive to developers. Ultimately, SEMS contracts should meet the needs of the city or town and match the municipality's tolerance for risk. Participating municipalities might consider the following common risk protection measures:

- SEMS per kWh Rate and Rate Escalation. The value of the SEMS contract to the municipality depends on how the SEMS per-kWh rate and SEMS rate escalation compare to the grid electricity rate and how it changes over the 20 year contract. To maximize savings, municipalities should try to negotiate both a low SEMS per-kWh rate and rate escalator. For example, a SEMS rate escalator of 3% or more would not be an attractive deal, given that grid electricity prices are projected to remain relatively flat for the next 20 years.
- Change-In-Law Provisions. Once a contract is signed, the developer is dependent on the incentives, such as SRECs, included in their economic model. The contract should not contain a clause that allows the developer to change the per-kWh price if the SREC program, for example, goes away. However, if the economics for the municipality are dependent on the virtual net metering program (e.g., landfill solar project), the municipality may wish to make the developer responsible for brokering the sale of the electricity to the grid on the municipality's behalf, interconnecting the PV system to a nearby load, or committing to renegotiating the per-kWh rate.
- Project Timeline. Municipalities may wish to negotiate a provision in the PPA that allows the municipality to exit the agreement with no liability to the developer if the developer does not meet a "Commercial Operation Deadline" (for example, 365 days from the date of contract execution). Other milestone dates, such as interconnection application submission, should also be considered.
- Financial Assurance. The RFQ states that "the Municipalities reserve the right to include a requirement for the posting of a financial assurance mechanism (such as a bond or letter of credit) to ensure that the facilities are removed and to protect the Municipality against other potential costs in the event that the Contractor defaults (i.e., decommissioning or default assurance)." Financial assurance mechanisms will vary by municipality and should meet each municipality's tolerance for risk.
- Reimbursement for Fulfilling Developer's Obligations. If the developer is non-responsive or in default, the municipality may want to retain the right to fulfill the developer's responsibilities. For example, the contract could give the municipality the right but not the obligation to conduct emergency repairs or to remove the system and restore the site to its original condition and be reimbursed by the developer.
- Vandalism. The developer is excused from much of their responsibilities, including meeting their performance guarantee, in the event of a force majeure. Vandalism should be covered by the developer's insurance. As such, vandalism should be explicitly excluded from the definition of force majeure in the SEMS contract.

What Happens if the Developer Defaults?

If the developer defaults, the developer's financial partner(s) will likely take over the project and assume, for example, the developer's operation and maintenance obligations. If the system is truly abandoned (i.e., no one steps in to take over the contract), costs to the municipality may include ongoing operations and maintenance, legal fees, and PV system removal. Under such a scenario, however, the municipality would benefit from the electricity generated at no cost and could sell the PV system components for their salvage value.

Where can Participating Municipalities Find More Information about SEMS Contracts?

Power Purchase Agreement Checklist for Local Governments. National Renewable Energy Laboratory. Available at <u>http://www.nrel.gov/docs/fy10osti/46668.pdf</u>.

Solar Powering your Community: A Guide for Local Governments. U.S. Department of Energy. Available at <u>http://solaramericacommunities.energy.gov/pdfs/Solar-Powering-Your-Community-Guide-For-Local-Governments.pdf</u>.

Energy Management Services. Department of Energy Resources. Available at http://www.mass.gov/eea/energy-utilities-clean-tech/green-communities/ems.html. The Guide to Developing Solar Photovoltaics at Massachusetts Landfills. Massachusetts Department of Energy Resources. Available at http://www.mass.gov/eea/energy-utilities-clean-tech/green-communities/ems.html. The Guide to Developing Solar Photovoltaics at Massachusetts Landfills. Massachusetts Department of Energy Resources. Available at http://www.mass.gov/eea/docs/doer/green-communities/ems.html.

Cadmus' slides on Solar Contracting Basics can be found in Appendix 3 of this report.

Metropolitan Area Planning Council (MAPC)

Request for Qualifications (RFQ) for

Solar Energy Management Services

Under the

Massachusetts General Laws, Chapter 25A, Section 111

A Guaranteed Energy Savings Contract

September 26, 2012

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1. Introduction

Awarding Authority: Metropolitan Area Planning Council Address: 60 Temple Place, 6th Floor, Boston, MA 02111 RFQ Primary Contact Person: Heidi Anderson, Manager, Municipal Procurement Services Email: handerson@mapc.org Telephone: (617) 451-2770 x 2065 Fax: (617) 423-0584 RFQ Secondary Contact Person: Helen Aki, Energy Services Coordinator Email: haki@mapc.org Telephone: (617) 451-2770 x 2054

The Metropolitan Area Planning Council (MAPC, or the "Awarding Authority") seeks qualifications, pursuant to M.G.L. c. 25A, §111, from qualified, interested parties (individually a "Respondent" and collectively the "Respondents") with one or more ultimately selected to serve as a contractor ("Contractor"), to provide comprehensive Solar Energy Management Services (EMS) for a solar photovoltaic (PV) power generating system ("PV System") with guaranteed onsite electricity generation at various locations within the jurisdiction of Municipalities who are members of the MAPC and who have elected to be listed in this Request for Qualifications (RFQ). Each location will be considered a "Facility" for the purposes of this RFQ.

The following Municipalities are participating in this RFQ. Such participation does not commit or bind any individual Municipality to entering into any agreement with the selected Contractor(s).

Belmont	Beverly	Boxborough	Brookline
Chelsea	Hudson	Lincoln	Marlborough
Medford	Medway	Melrose	Reading
Sherborn	Wayland	Weston	Weymouth
Winthrop			

The Respondent to this RFQ is required to demonstrate qualification in identifying, assessing, planning, designing, financing, installing, owning, operating and maintaining solar power electric

generation facilities. The Respondent shall also be required to submit qualifications of any entity with which it intends to subcontract all or any work associated with the solar installation(s).

Respondents shall be evaluated on criteria set forth in this RFQ. The MAPC may cancel this RFQ, or may reject in whole or in part any and all Responses if the MAPC determines that cancellation or rejection is in its best interest.

1.1 **Proposed Selection Timeline**

Notification to the DOER:	September 11, 2012
RFQ Published in Central Register and Advertised:	September 26, 2012
Mandatory Pre-bid Conference:	October 11, 2012
Final Inquiries Due:	October 19, 2012
Responses Due:	October 26, 2012
Anticipated Interviews:	November 28-30, 2012
Anticipated Selection for Negotiations:	By December 31, 2012

Stage One: DCAM Contractor Certification Process.

Respondents are advised that advance certification by Massachusetts Division of Capital Asset Management and Maintenance (DCAM) is required pursuant to M.G.L. c. 149 § 44. Certification application forms are available from the DCAM Contractor Certification Office at (617) 727-9320.

Stage Two: Mandatory Pre-Bid Conference.

A mandatory pre-bid conference will be held at the offices of The Cadmus Group, 100 5th Ave. Waltham, MA 02451 on October 11, 2012 from 1:00 pm to 3:00 pm. All prospective Respondents must attend the mandatory pre-bid conference. Respondents interested in attending must confirm attendance by contacting Heidi Anderson at <u>handerson@mapc.org</u>. Respondents must provide the number of attendees (up to 3) and the full contact information for the key person attending the pre-bid conference.

All questions and inquiries concerning this RFQ must be submitted in writing no later than 5:00 PM on October 19, 2012. Inquiries will not be answered directly. The MAPC will issue an addendum, which will address the written questions submitted by the deadline, and be publically available on COMM-PASS and the MAPC website.

It is the responsibility of the Respondent to contact the MAPC at the e-mail address above prior to the submittal deadline to ensure that the Respondent has received all addenda issued by MAPC.

Stage Three: Submission of Responses.

A responding Contractor shall submit: (1) original and (10) hard copies, as well as one (1) singlefile electronic copy (on a portable media), of its Response according to the requirements set forth for the format described herein. Each response will be reviewed for completeness, and incomplete responses may be rejected without further consideration. Respondents shall use the prescribed format to indicate their experience and qualifications, describe their approach to the project, and explain their responses.

The MAPC reserves the right to waive any irregularities and formalities in the selection of the Contractor for this project. While Respondents are required to submit responses that fully comply with the requirements set forth in this RFQ, alternative responses may also be proposed if the Respondent feels such responses provide measureable value to the participating Municipalities. Such alternative responses must meet the requirements set forth in this RFQ.

Stage Four: Selection of Vendor and Contract Execution

The MAPC will assemble a Selection Committee comprised of representatives from participating Municipalities to evaluate and rank all Responses based on the criteria listed in this RFQ. Top candidates will be identified based on written Responses as well as answers to additional clarifying questions as requested by the MAPC. The MAPC Selection Committee will hold interviews with top candidates.

NOTE: The MAPC Selection Committee may select More than one Contractor.

Following selection of a top-ranked Contractor or Contractors, the MAPC and the Contractor or Contractors will negotiate a Memorandum of Understanding (MOU) that permits the selected Contractor or Contractors to enter into individual Solar Energy Management Services Agreements (EMSA) with each participating Municipality (or collectively, as Municipalities see fit).

The selected Contractor(s) is required to conduct an assessment of solar potential and to provide associated pricing details for any participating Municipality that requests this information. If the Municipality elects to move forward, the Contractor and Municipality will negotiate and execute a Solar EMSA. If the Municipality determines that an acceptable agreement cannot be reached with a Contractor selected for a particular Facility, the Municipality may initiate negotiations with any other Contractor awarded by the MAPC.

3. **RFQ** Procedures

Modification or Withdrawal of Responses: Any Response may be withdrawn or modified by written request of the Contractor, provided such request is received by the MAPC at the above e-mail address prior to the due date for Responses.

Cost of Response Preparation: Neither the MAPC nor the Municipalities assume liability and will not reimburse any costs or expenses incurred by any Contractor (whether or not selected) in developing Responses to this RFQ.

References and Disclosure of Information: Submission of a Response shall be deemed permission to the MAPC Selection Committee to make inquiries concerning the Respondent to any persons or firms deemed appropriate by the Selection Committee. The Contractor's submission of a Response shall be deemed acknowledgement that it is familiar with the Massachusetts Public Records Law, MGL c. 66, § 10 and is bound thereby. Disclosure of any information provided by any Contractor in connection with this RFQ shall be in strict accordance with the laws and regulations regarding such disclosure pursuant to MGL Ch. 66, § 10.

To review a copy of Responses submitted to the MAPC after the selection has been awarded, submit a written request in compliance with the Massachusetts Public Records Act to the RFQ Contact Person identified above.

4.1 **Project Description**

Through this RFQ, MAPC intends to develop solar PV electric generation facilities and to procure long-term renewable electricity supplies for Municipalities and consumers within Municipalities, which support MAPC's functions, policies and goals, including promoting and supporting the development of renewable energy resources and acquiring a "green" wholesale electric supply. This RFQ is being issued to allow the participating Municipalities to evaluate the qualifications and expertise of multiple Respondents to determine which will best meet their financial and environmental interests.

NOTE: MAPC is performing this procurement on behalf of participating Municipalities.
 MAPC is not directly developing solar generation facilities.

Specifically, the purpose of this RFQ is to solicit qualifications under MGL c. 25A §111 from Respondents to:

- Design, procure, install, test, and commission a solar photovoltaic (PV) power generating system ("PV System") with guaranteed onsite electricity generation at each Facility ("Project"), as feasible.
- 2. Assist the Municipalities in evaluating which municipal properties may be suitable for solar energy development, in addition to those identified the accompanying attachment. (Sites are not to be evaluated in the response.)
- 3. Incorporate roof work into the Project(s), as needed.

It is the desire of MAPC to help site several small, medium and large-scale PV solar energy Systems to benefit citizens of the Municipalities, the environment, and reduce reliance on foreign sources of energy. NOTE: To support participating Municipalities with little available space suitable for solar PV, it is the desire of MAPC to received Responses from Contractors with interest and expertise in installing small scale PV Systems (e.g., less than 100 kW), as well as those with interest and expertise in installing larger PV Systems.

Following selection of a top-ranked Contractor or Contractors, the MAPC and the Contractor or Contractors will negotiate a Memorandum of Understanding (MOU) that permits the selected Contractor or Contractors to enter into individual Solar Energy Management Services Agreements (EMSA) with each participating Municipality, or collectively, as Municipalities see fit.

Each participating Municipality may enter into a Solar EMSA with a selected Contractor for a Facility pursuant to the evaluation criteria set forth in this RFQ. Respondents may be selected to serve as Contractor for one or more Facilities at the direction of each Municipality. Municipalities may work together to secure the most advantageous pricing from a selected Contractor(s).

a. Site Information

A list of each Municipality's buildings and facilities to be evaluated pursuant to this RFQ is included as an attachment to this RFQ. It will be the obligation of the Contractor(s) to determine each site's potential. Systems may be roof- or ground- mounted depending on the best site and/or building characteristics.

It is possible that additional facilities not included in this list may be added at a later date at the discretion of each Municipality. Further, upfront roof work may be required to reduce risk and long-term costs (associated with roof repairs and system shutdown, removal, and reinstallation) to Municipalities. The final list of facilities and necessary roof work to be included in a Solar EMSA will be stipulated in the Solar EMSA scope of work to be negotiated individually with each Municipality.

b. Alternative Structures

In addition to standard PV system applications (e.g., rooftop, landfill), Municipalities may also be interested in alternative system applications, such as parking lot structures. Respondents are asked to summarize their expertise with any alternative system applications proposed.

c. Contract Terms

The Contractor in their Response shall agree to conform to the terms and services listed in Section 6.4 of this RFQ. Any exception to the Contract Terms shall be noted and explained in Respondents' response. The Contractor may propose contracts with each participating Municipality that contains additional services or terms; however, Municipalities reserve the right to deem terms that do not conform to the terms set forth in this RFQ void.

d. Common Technical Specifications

Contractors shall refer to the Common Technical Specifications included in this RFQ. These specifications are required for each PV System when negotiating the scope of work in Solar EMSAs and should be considered when preparing a Response to this RFQ.

e. Role of Participating Municipalities

To facilitate the Contractor in the execution of the Project(s), each Municipality will endeavor in their best ability to:

- Provide reasonable access to municipally-owned properties and buildings to obtain data (whether required or reasonably requested by the Contractor).
- Grant the Contractor sufficient access and occupancy rights to undertake the Project at the Premises. In this context, the Municipality will require the Contractor to enter into a Solar Lease Agreement, which will form part of the Solar EMSA. The Agreement will define the terms and conditions for the lease.
- Provide access for the assessment of sites and, for those sites selected for development, the installation, maintenance, and ongoing operation of the System.
- To the extent reasonable and appropriate, provide information/assistance to the Contractor in securing any remaining permits for the Project, including but not limited to local board approvals.
- Cooperate with the Contractor to the extent reasonable and appropriate on remaining issues with respect to site assessment, access, and facility construction and interconnection.

5.1 Evaluation Criteria

Responses shall be submitted in the format outlined in Section 6.7. Each Response will be reviewed to determine if it is complete. The Selection Committee will review each Response prior to the selection process for completeness and adherence to format. A Response will be considered complete if all requested sections and information are included in the proper order.

Each section or subsection of the Response will be evaluated individually for completeness and to determine the most advantageous option for the Municipalities. The Selection Committee reserves the right to select the Developer that provides the most responsive and responsible Response, which best meets the needs of the Municipalities, taking into account the Developer qualifications, submittal quality, and evaluation criteria.

The MAPC Selection Committee plans to develop a shortlist of three (3) firms prior to making a selection. Scoring will be summarized on a Formal Evaluation Form. The MAPC Selection Committee may adjust the scores following interviews as provided in MGL Ch. 25A, Sec. 11I, and such additional interviews as the MAPC Selection Committee may deem necessary to evaluate the Respondents.

6. Appendices

This section contains the following appendices:

To be completed by Respondent and submitted with Response:

- 6.1 Cover Letter & Respondent Information Form
- 6.2 Certificate of Non-Collusion
- 6.3 Attestation Regarding Filing of Tax Returns
- 6.4 Required Contract Terms Checklist

To be considered by Respondent in developing Response:

- 6.5 Site Information
- 6.6 Minimum Technical Specifications
- 6.7 Response Format Template
- 6.8 Response Evaluation Form
6.1 Cover Letter & Respondent Information Form

The following information should be typed on Respondent's letterhead. Fill in all bracketed sections and delete or re-format all brackets, italics, and instructions. Black line or otherwise indicate all changes in wording, additions, or deletions.

Heidi Anderson, Manager, Municipal Procurement Services Metropolitan Area Planning Council 60 Temple Place, 6th Floor Boston, MA 02111 Phone: (617) 451-2770 x 2065 E-mail: handerson@mapc.org

RE: Respondent Information Form & Cover Letter for Solar Energy Management Services

Dear Ms. Anderson,

In response to your Request for Qualifications ("RFQ"), we [insert name of Respondent] (the Respondent) hereby submit our Statement of Qualifications ("Response") to implement performance-based renewable energy systems with guaranteed onsite energy generation at [some or all] of the Facilities included in your RFQ for the participating Municipalities.

[Indicate any preference for specific types of facilities, if application, including: small-scale rooftop solar, medium-scale rooftop solar, small- to medium-scale ground-mounted sites, landfill sites]

We offer the following commitments and representations to the Metropolitan Area Planning Council ("MAPC"):

1) The undersigned is authorized to submit this Statement of Qualifications on behalf of the Respondent and to bind the Respondent to its terms. We have fully reviewed the RFQ and

any and all addenda thereto, and we fully understand the scope and nature of the project and contractual arrangements for which Responses are being requested.

- 2) Our Response has been prepared and is submitted without collusion, fraud or any other action taken in restraint of free and open competition for the response to the RFQ. Neither the Respondent nor any member of the Respondent's project team is currently suspended or debarred from doing business with any governmental entity.
- 3) We certify that all of the information provided in our Response is true and accurate and that MAPC may rely on such information in the evaluation of our Response. We have read and understand the evaluation criteria in the RFQ. We accept that the MAPC reserves the right to waive informalities and to reject in whole or in part any and all Responses. We accept that the MAPC Selection Committee reserves the right to select the Response that they view as most advantages on the basis of the evaluation criteria listed in the RFQ.
- 4) We acknowledge that the work to be performed under any contract negotiated with a participating Municipality (as defined in the RFQ), including work by subcontractors, must comply with the provisions of the Massachusetts General Laws pertaining to prevailing wage.
- 5) We agree to take full responsibility for all costs of preparing this Response. We waive any and all claims against the MAPC and its employees, representatives and agents related to the cost of preparing, submitting and having the MAPC review and evaluate this Response.
- 6) We have read and understand the common technical specifications for solar PV systems in the RFQ, and agree to meet or exceed such specifications in accordance with the provisions described therein.
- 7) We have included the following required items as part of our Response:

Minimum Denvised Kome	Check if
Minimum Required Items	Included:

Certificate of Non-Collusion	
Attestation Regarding Filing of Tax Returns	
Contract Terms Checklist	
Response in format of Response Form	
Template	

Sincerely,

[Insert name of proposer]
By: [Insert authorized representative]
[Print or type name]
[Street address]
[City, State, Zip]
[Telephone]
[E-mail]
[Date]

Respondent Information Form

Developer Point of		
Contact:		
Name of Company:		
Address:		
Town, State, Zip		
Code:		
Phone:	Fax:	E-mail
Federal tax id# (SSN for inc	dividuals):	
Organizational structure:	Corporation: Partnership:	Joint venture:
	Individual/Proprietorship C	Dther:
Ownership:	Public stock: Privately owr	ned: Non-profit:
Minority and women busines	s enterprise information (check as appro	priate):
Minority owned:	Women owned: Owned by	person with disability:
Small Business:	SOMWBA Certified:	

I have read, understand, and agree to comply with the terms and conditions for providing Energy Management Services to the Awarding Authority as stated in the Awarding Authority's Request for Responses. Furthermore, I hereby certify, under penalties of perjury, that this response has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.

Signature

Date

If applicable, fill in the following:

I acknowledge receipt of Addendum No(s). _____, dated _____.

6.2 Certificate of Non-Collusion

The undersigned certifies, under penalties of perjury, that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club or other organization, entity, or group of individuals.

(Signature)

(Name of person signing proposal)

(Name of business)

6.3 Attestation Regarding Filing of Tax Returns

Please complete this form for each participating company on this proposal

To: Metropolitan Area Planning Council

Pursuant to M.G.L. ch. 62C, § 49A, I certify under the penalties of perjury that the undersigned offeror, to the best of his/her knowledge and belief, has filed all state tax returns and paid all state taxes required under law.

Social Security Number or Federal Identification Number Signature of Individual or Officer

Date

Name of Corporation

6.4 Required Contract Terms Checklist

The MOU and any Energy Management Services Agreement executed pursuant to this RFQ shall conform to the terms and services in the attached and discussed below. If Respondents (or their financing parties) have any exceptions to these contract terms, they must: (1) describe the exception(s) and the proposed alternative; and (2) explain the need for the exception in writing and attach the response to their response.

The response or Solar EMSA may contain additional services or terms, but the MAPC Selection Committee and Municipalities reserve the right to consider Responses and proposed Solar EMSAs void if the Respondent cannot meet the minimum conditions below.

Part 1: Required Services

Porviroment	Accepts
Kequirement	(Y/N)
The selected Contractor(s) is required to provide Project pricing to any participating	
Municipality that requests pricing. The Contractor's pricing proposal must include: (a)	l
guaranteed annual electricity output (kWh/year minus onsite parasitic load); (b) annual	l
system degradation factor; (c) First Year Price; and (d) Annual Electricity Price Increase	l
Factor.	l
The Contractor(s) will address both onsite usage of power by the host Municipalities and	
net metering of the excess energy (to the extent permitted by law) to provide additional	l
savings to the Municipalities.	l
Before submitting a proposal, each Contractor will be responsible for obtaining any	
studies and data concerning conditions (surface, subsurface and underground facilities)	l
at the site or otherwise, which may affect the Contractor's ability to comply with	l
obligations contract or which the Contractor otherwise reasonably deems necessary to	l
develop a proposal to undertake the Project in accordance with the terms and conditions	l
of this RFQ.	1
The Contractor is responsible for confirming that a Massachusetts Electrical Code (MEC)	
compliant interconnection, including any recommended infrastructure improvements, can	1
be made at the interconnection point.	l

The selected Contractor(s) shall:

The selected Contractor(s) shall:	
1. Design, procure, install, test, and commission a solar photovoltaic (PV) power	
generating system ("PV System") with guaranteed onsite electricity generation at	
each Facility ("Project"), as feasible.	
2. Assist the Municipalities in determining which municipal properties may be	
suitable for solar energy development, in addition to those identified in the	
accompanying attachment. (Sites are not to be evaluated in the RFQ Response.)	
3. Incorporate roof work into the Project(s), as needed.	
If the Municipality determines that an acceptable agreement cannot be reached with a	
Contractor selected for a particular Facility, the Municipality may initiate negotiations	
with any other Contractor awarded by the MAPC.	
The selected Contractor will be responsible for designing, financing, operating and	
maintaining the System, and obtaining all necessary permits and approvals.	
Within 90 days of the award, the Contractor must perform a detailed engineering study	
of acceptable quality to the Municipality. The study will include a complete structural	
review of the Municipality's buildings (as applicable) and/or site to determine viability	
of a PV installation (the "Study"). If a satisfactory Study is not executed, then the	
Municipality shall have the right to withdraw the award and make the award to another	
Contractor selected by the Awarding Authority. The Study is subject to acceptance by	
the Municipality and together with any revisions becomes the specifications for the EMSA.	
The installation must be in compliance with all local, state, and federal codes and	
standards, including all recent additions to the Massachusetts Building and Electric Codes.	
As a condition of project acceptance, the Contractor will provide "as built" and record	
drawings of all existing and modified conditions associated with the Project conforming	
to typical engineering standards. This should include architectural, mechanical, electrical,	
structural, and control drawings each stamped by a Massachusetts Registered	
Professional Engineer (P.E.) for the corresponding discipline.	
The Contractor will use a method for computing the electricity generation that is wholly	
consistent with the letter and intent of the most recent version of the U.S. Department of	
Energy, Federal Energy Management Measurement and Verification Guidelines (FEMP	
Guidelines). Acceptance of the FEMP Guidelines by your firm is a minimum contract term.	
Potential Contractors are advised that municipal land leased to a private party is subject	
to property taxation by each Municipality. The Contractor, therefore, will be responsible	
for the payment of any applicable real estate or personal property tax assessed	
against the Premises.	

The selected Contractor will be required to assist each Municipality meet its annual Solar	
EMSA reporting requirements to the Massachusetts Division of Energy Resources (DOER).	
The Contractor will be responsible for interfacing with the local distribution company for	
all matters required for the interconnection of the solar facility to the grid (e.g., metering,	1
protection, extension of distribution lines for connecting the solar facility to the grid). The	1
Contractor will assist the Municipality with applications for interconnection and net	1
metering (Schedule Z and Cap Allocation) and cover the cost of any associated fees.	1
PV Systems installed will meet Common Technical Specifications identified in Section 6.6.	

Part 2: Required Contractual Language

Requirement	Accepts (Y/N)
The Contractor is considered the responsible party under this program and will be	
required to meet all program and contract terms and conditions. The Contractor must	
ensure that all of their subcontractors adhere to program terms and conditions. The	
Municipality will investigate any project complaints. The Municipality may revoke a	
Contractor's eligibility as a contractor on the project at any time if the Contractor fails to	
meet any of the program requirements and/or terms and conditions.	
It is expected that the selected Contractor will pursue tax credits and incentives, rebates,	
and other benefits that are available and/or may become available in the future. The	
EMSA shall include a plan for the disposition and/or assignment of: (a) any	
environmental or other attributes (such as RECs, greenhouse gas offsets, or forward	
capacity market payments) that are generated in connection with the operation of the	
System; (b) any tax credits or incentives generated in connection with the operation of	
the System; and (c) any grants or rebates obtained in connection with the installation of	
the System. The selected Contractor shall comply with any requirements (such as	
insurance, reporting, etc.) that are associated with available programs.	
The Contractor, subcontractor(s), and employees for the project shall possess	
certifications and/or licenses as required by the Commonwealth of Massachusetts. The	
Contractor's project team must include a Massachusetts Registered Professional Engineer.	
The selected Contractor will be responsible for designing, financing, operating, and	
maintaining the System, and obtaining all necessary permits and approvals.	

The selected Contractor shall comply with any requirements (such as insurance, reporting,	
etc.) that are associated with available programs.	
The Municipality retains ultimate approval over scope of work, choice of subcontractor,	
equipment installed, and end use conditions. No work can proceed without the prior	
written consent of the Municipality. However, such approval shall not be unreasonably	
withheld.	
The selected Contractor shall hold harmless, defend, and indemnify the Municipality and	
its officers, agents and employees against all claims, demands, actions and suits	
(including all attorneys' fees and costs) brought against any of them arising from the	
selected Contractor's work or any subcontractor's work under the contract.	
The necessary rights-of-way for any construction to be done across or in private	
property will be obtained by the Municipality. The Contractor shall take due and proper	
precautions against any injury to adjacent structures and shall hold him/herself strictly	
within the rights secured to him by the Municipality in prosecuting the work on private	
property.	
The Contractor shall obey and abide by all laws of the Commonwealth of Massachusetts	
relating to the employment of labor and public work and all ordinances and	
requirements of the Awarding Authority regulating or applying to public improvements.	
The Contractor agrees not to discriminate against any employee or applicant for	
employment, to be employed in the performance of this Agreement, with respect to hire,	
tenure, terms, conditions, or privileges of employment, or any matter directly or indirectly	
related to employment, because of age, sex, race, color, religion, national origin, or	
ancestry.	
The Municipality and its consultant reserve the right to determine whether the material or	
equipment installed is equal to those specified in the EMSA and conduct post-installation	
quality assurance inspections. In the event an article of any material or equipment	
specified by the trade name of any particular patentee, manufacturer, or dealer of any	
such article or articles or materials is to be substituted, the replacement must be equal in	
quality, finish and durability and equally as serviceable (e.g., duration and terms of	
warranty) for the purpose for which it is or they are intended as the originally specified	
article. The Municipality has the right but not the obligation to make the decision as to	
whether the material or equipment offered is equal to those specified, and the decision	
of the Municipality shall be final.	
In the execution of the Agreement, it may be necessary for the Contractor to subcontract	
part of the work to others; however, the Contractor shall not award any work to any	

subcontractor without prior written approval of the Awarding Authority which approval	
shall not be given until the Contractor submits to the Awarding Authority a written	
statement concerning the proposed award to the subcontractor, which statement shall	
contain such information as the Awarding Authority may require.	
The Contractor shall be fully responsible to the Awarding Authority for the acts and	
omissions of its subcontractors and of persons either directly or indirectly employed by	
the Contractor, as it is for the acts and omissions of persons directly employed by it.	
Nothing contained in this Agreement shall create any contractual relation between any	
subcontractor and the Awarding Authority.	
The Contractor shall not assign, transfer, convey, or otherwise dispose of this Agreement,	
or any part hereof, or its right, title or interest in the same or any part thereof, without	
the prior written notice to the Awarding Authority. The Contractor shall not assign by	
power-of-attorney, or otherwise, any of the moneys due or to become due and payable	
under this Agreement, without the prior written notice to the Awarding Authority.	
The Contractor must carry an appropriate level of insurance for both the construction and	
operations phases. Specifically, the selected Contractor(s) shall be required to provide	
the Issuer with proof of insurance submitted to the Issuer as follows:	
• General Liability Insurance in the amount of one million dollars (\$1,000,000)	
each occurrence.	
• Automobile Liability Insurance in the amount of one million dollars (\$1,000,000)	
combined single limit.	
Massachusetts Worker's Compensation Insurance in the amount of statutory limits.	
• Professional Liability Insurance in the amount of one million dollars (\$1,000,000)	
each occurrence.	
The Municipality must be named as an additional insured on all such policies of insurance	
and any such policies must provide at least thirty (30) days advance notice to the	
Municipality in the event of cancellation or termination of any such policy.	
Notwithstanding any other law, the provider of the energy management services must	
file with the Awarding Authority a payment and performance bond relating to the	
installation of the project.	
Contractor shall provide the Customer with 100 % payment and performance within 30	
days of award of the contract. The Contractor shall furnish a certified copy and	
duplicate of a performance bond, with project financier as co-beneficiary along with the	
customer. Performance and payment bonds shall secure 100% of the total contract	

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value.	
The performance and payment bonds shall remain in effect until the commercial	
operation date of the installed System(s). The performance bond shall remain in effect	
until 60 days after the Municipality receives notice of the Commercial Operation Date.	
The payment bond shall be released upon receipt of satisfactory evidence that all	
subcontractors, laborers, etc., have been paid in full.	
Within 90 days of contract execution, the Contractor will begin implementation of	
preliminary operations and procedures to generate electricity at the named properties	
of the Municipality.	
The Municipality must have access to inspect both the work conducted at project site	
during construction and operations phases, and to the books, records, and other	
compilations of data, which pertain to the performance of the provisions and	
requirements of this agreement. Records shall be kept on a generally recognized	
accounting basis, and calculations kept on file in legible form.	
The Municipality will review all proposed modifications to the building and systems, and	
must approve of them before commencement of any work. Such approval shall not be	
unreasonably withheld.	
The Contractor is required to pay prevailing wage rates for all employees involved in	
providing contract services, as determined by the Department of Labor Standards	
(M.G.L c149, s.26 to 27H). For inquiry and clarification of prevailing wage laws, contact	
DLS.	
All drawings, reports and materials prepared by the Contractor specifically in	
performance of the EMSA shall become the property of the Municipality, and shall be	
delivered to the Municipality as needed or upon prior to project acceptance.	
The Contractor will be required to file a Disclosure Statement listing all its public	
contractors; a Truth in Negotiations Certificate as describe in M.G.L. Chapter 7, section	
301, a Financial Interest Statement as described in M.G.L. 7, section 14A; and a Tax	
Certificate as described in M.G.L. Chapter 62C, section 49A.	
The Contractor shall perform its obligations hereunder in compliance with any and all	
applicable federal, state, and local laws, rules, and regulations, including applicable	
licensing requirements, in accordance with sound engineering and safety practices, and in	
compliance with any and all reasonable rules of the Municipality relative to the premises.	
The Contractor shall be responsible for obtaining all governmental permits, consents, and	

authorizations as may be required to perform its obligations hereunder.

Neither party shall be liable for any inability to perform its obligations under any	
subsequent agreement due to war, riot, insurrection, civil commotion, fire, flood,	
earthquake, storm or other act of God. The EMSA shall note that Force Majeure does not	
include acts of vandalism.	
At the end of the contractual term, the Contractor may be required to remove the solar	
facilities. However, the Municipality reserves the right to negotiate with the Contractor	
buy-out options for purchasing the facilities prior to the contractual term or for extending	
the duration of the Contract and to hire a consultant for owner's agent services.	
Municipalities reserve the right to include a requirement for the posting of a financial	
assurance mechanism (such as a bond or letter of credit) to ensure that the facilities are	
removed and to protect the Municipality against other potential costs in the event that	
the Contractor defaults (i.e., decommissioning or default assurance).	

6.5 Site Information

As companion files to this RFQ, data for each of the participating Municipalities is provided in electronic form due to the comprehensive and cumbersome nature of the data. Such data includes Rooftop and Landfill Site Information, historic energy consumption data, and past site assessment reports. The site information file will also be distributed as a separate attachment alongside this RFQ and can also be found on COMM-PASS and the MAPC website where this RFQ has been posted.

It is possible that additional facilities which were not included in this list may be added later at the discretion of each Municipality. Further, upfront roof work may be required to reduce risk and long-term costs (associated with roof repairs and system shutdown, removal, and reinstallation) to Municipalities. The final list of facilities and necessary roof work to be included in a Solar EMSA will be stipulated in the Solar EMSA scope of work to be negotiated individually with each Municipality and reviewed and approved by MA DOER.

6.6 Minimum Technical Specifications

These Minimum Technical Specifications are those that each PV System must meet or exceed. The Respondent must consider these Technical Specifications in the development of its Response. These specifications and requirements are not intended to be all-encompassing, nor are they intended to override good engineering practice or applicable laws and code requirements. The Contractor is responsible for conformance to all relevant, prevailing codes, and the codes take precedence over these Technical Specifications. Site-specific conditions and/or local regulations may require additional specifications and requirements not included in this RFQ.

A. Design

1. Design Life and Estimated Production Requirements

a. Each PV System shall have a service life of twenty (20) years at rated load.
b. The PV System must be designed so that the estimated annual energy output for the PV System, based on actual site-specific shading, azimuth, and inclination is at least 80% of the default optimal output for a fixed PV System of the same capacity in Boston as estimated by PVWATTS (or equivalent) Version 1. PVWATTS Version 1 is available at the following website:

http://rredc.nrel.gov/solar/calculators/PVWATTS/version1/US/Massachusetts/. 2. Additional Design Requirements - Stamped affidavits or drawings are required for the electrical and structural components of the installation.

a. The electrical design of the PV System must be stamped by a Professional Engineer ("PE") licensed in the Commonwealth of Massachusetts.

b. The structural design of the PV System requires a stamped affidavit from a Massachusetts-registered PE or architect confirming that the underlying structure is adequate to withstand the static and dynamic loads of the PV System. The analysis must include all mounted portions of the PV System, including modules, racks, ballast, and other related components. The analysis must also include all mount securing portions of the PV System, including any pins and penetrating devices.

c. The design of the PV System shall meet OSHA Part 1926 – Safety and Health Regulations for Construction requirements by proposing, as applicable, a suitable safety monitoring system, a fall management plan, and a fall protection system for the Municipality's review and approval.

B. Equipment

1. General - All mounting materials for the PV System shall be corrosion-proof aluminum or 316 stainless steel. All materials subject to exposure to the sun must be sunlight resistant material. All conductors shall be copper. Municipalities reserve the right to approve alternative materials.

2. Inverters

a. Inverter efficiency shall be equal to or greater than 93%.

b. Installation shall meet the current UL 1741/IEEE Standard 1547, MEC codes and the latest applicable ANSI and FCC standards and addenda dated prior to the award of the purchase order for this procurement.

c. Inverters shall be approved and listed with the California Energy Commission's list of eligible PV modules: http://www.gosolarcalifornia.ca.gov/equipment/pv_modules.php.
d. The point of interconnection for the inverter(s) shall not be in parallel with any backup generators at the site during emergency generation.

e. Each inverter shall include:

i. Automatic operation including start-up, shutdown, self-diagnosis, fault detection and alarming.

ii. Ground fault protection.

iii. NEMA 1R rating for interior electrical room location or NEMA 3R for any exterior or mezzanine location.

f. The PV System must include underground power connection to/from the modules and the inverter(s) in the interior installation. The inverter(s) must have secure, weatherproof housing in the exterior installation.

g. The inverter(s) housing must be a sound structure designed to withstand all dead load, live load, wind and seismic loads for the area.

h. Lightning protection must be provided for the inverter(s) housing.

3. Combiner & Junction Boxes - Combiner boxes and junction boxes which are located outdoors shall have the following characteristics: NEMA 3R enclosure, 600 VDC, and listed by a nationally recognized testing laboratory. All PV System output circuits shall be protected by lightning arrestors of the appropriate voltage rating.

 DC Disconnect Switches - The DC disconnect(s) shall be 600 VDC, heavy-duty safety switch and be listed by a nationally recognized testing laboratory. Where located outdoors, disconnects shall be NEMA 3R. Where fused disconnects are used, the fuse shall have appropriate DC ratings.
 AC Disconnects - All AC disconnects shall be rated to interrupt the necessary voltage and current for the application and be listed by a nationally recognized testing laboratory. Where located outdoors disconnects shall be NEMA 3R. The AC disconnect shall be appropriately located per the utility's requirements and its location shall be noted on the one-line electrical drawing.
 Interconnection Circuit Breaker - The Contractor shall provide the appropriate size, make, and model interconnection switchgear that is suitable for back feed in accordance with NEC 690.64.
 Wiring and Conduit

a. All system wiring shall be of an MEC approved wiring method. All conductors shall have a temperature rating of 90 degrees C or lower.

- b. All conductors shall be copper, sized appropriately to minimize line losses.
- c. All conduits inside the building shall be rigid galvanized steel ("RGS").

d. All outdoor conduit shall be PVC coated RGS.

e. All outdoor electrical enclosures shall be NEMA 3R and have watertight connections.

f. Exposed cables shall be listed as sunlight resistant.

g. Specification for conduit materials for wire-run in trench(es).

8. PV System Grounding - The PV System shall be properly grounded in accordance with all applicable requirements of local electrical, MEC and NEC codes.

9. PV Array

a. PV Modules

i. Modules shall be UL 1703 listed.

ii. Modules shall be approved and listed on the California Energy Commission's list of eligible PV modules:

http://www.gosolarcalifornia.ca.gov/equipment/pvmodule.html.

b. Mounting System

i. In all installations, the mounting system shall promote ambient air circulation beneath and above modules to enhance efficiency. The lower edge of the panels on the mounting should be designed to eliminate power production losses from snow coverage and provide a comfortable working height for maintenance.
ii. Modules shall be individually removable for maintenance and repair. iii. The mounting system shall be designed to meet or exceed requirements of all applicable state and local building codes, including wind speed, snow and seismic load requirements, and penetration restrictions in accordance with a Facility's capped landfill requirements. The Contractor shall describe and document the wind and snow loads that the PV System is designed to withstand.

iv. The PV System installation must meet all code and UL requirements with respect to lightning protection. The Contractor must have the building lightning protection system recertified by a contractor that is UL listed for lightning protection systems.
v. Each module row or column must be separated to minimize shadowing effects on other modules. The spacing between modules shall be noted on the PV layout drawing.

10. Installation Requirements

a. The output of the PV inverter(s) shall not interfere with or damage the function of existing building electrical distribution systems. All serviceable components must be "accessible" as defined by the MEC article 100. The installation shall comply with all applicable federal, state and local building codes including the latest Massachusetts Electrical Code. The Contractor shall not, under any circumstance, operate switchgear forming part of the main distribution system. The Contractor shall coordinate with the Municipality to operate the switchgear to disconnect or re-energize loads. Advanced notice shall be given to the Municipality for interconnection of PV System output or if the switchgear is to be turned off.

b. The PV System electrical work must be performed by a Massachusetts licensed electrician.

c. The PV System must be installed according to the manufacturer's instructions and in compliance with all applicable codes and standards.

d. The Contractor is responsible for all aspects of the local electric utility interconnection agreement including the submission of Schedule Z to accommodate any net metering arrangement requested by the Municipality. An application must be submitted to the local electric utility, with or without Schedule Z as appropriate, to start the formal interconnection process, and sufficient lead time should be allowed to successfully achieve interconnection under the local electric utility interconnection standards. All PV Systems must have an appropriate electric utility interconnection agreement in place at the time of interconnection to the utility grid.

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e. All pertinent permits and inspections must be obtained and copies kept on file as may be required by local codes and/or state law.

f. All PV Systems shall include appropriate surge arresters or other means to protect the PV System components from lightning and other surge events. It is the responsibility of the Contractor to ensure that the installation meets any local, state or federal building and electrical laws that address lightning and surge protection.

11. PV System Warranty Requirements

NOTE: Municipalities shall not be responsible for any costs associated with equipment service, replacement, etc. under the terms of the EMSA. Any and all costs associated with a. Contractor Warranty. All PV Systems must have a minimum five (5) year labor warranty provided by the Contractor to protect the Municipality against defective workmanship, PV System or component breakdown, or degradation in electrical output of more than fifteen percent from their originally rated electrical output during the warranty period. The warranty must cover the PV System, including PV modules (panels) and inverter(s), racking, conduit run, and components, and provide for no-cost repair or replacement of the PV System, components, including any associated labor during the warranty period.

b. Manufacturer Warranty. All major equipment must meet the following minimum manufacturer warranties:

i. Photovoltaic Module: Minimum of one (1) year product warranty from date of sale to first consumer purchaser for product workmanship and materials, plus a minimum performance. warranty of twenty (20) years within which time the module will produce, under standard test conditions, a minimum of 80% of the product's minimum rated power at time of sale.

ii. Inverters: Minimum of fifteen (15) years product warranty from date of sale to first consumer purchaser for product workmanship and materials.

iii. Revenue grade production meters: Minimum of two (2) years following the effective commercial operation date that the meter system will be free from all defects in design, materials and workmanship. Such warranty, containing no exclusions or limitations, shall be in a form acceptable to, and for the benefit of, the Municipality.

iv. Mounting equipment: The Contractor shall obtain from the mounting system manufacturer(s) a warranty that the mounting system(s) will be free from all

defects in design, materials and workmanship for a period of five (5) years following the effective commercial operation date. Such warranty, containing no exclusions or limitations, shall be in a form acceptable to, and for the benefit of, the Municipality.

12. Electricity Production Meter Requirements - All PV Systems must have a dedicated revenue grade production meter that:

a. is readily accessible and easily understood by the Municipality;

b. records the PV System's AC output as measured on the AC side of the PV System's isolation transformer;

c. shall be separate from the local utility billing meter and shall not interfere with utility billing or net metering;

d. must be a standard utility "revenue quality" meter that conforms to applicable American National Standards Institute ("ANSI") C-12 standards and shall be installed on the AC output side of the PV System's inverter or isolation transformer; and e. shall have a visible display of cumulative energy produced by the PV System and be available for periodic testing and/or re-calibration, if necessary.

13. Automated Reporting - All PV Systems must include an automated reporting system, i.e., Data Acquisition System ("DAS") that:

a. will provide automated monthly reporting to the Massachusetts Renewable Energy Trust ("MRET") Production Tracking System ("PTS") through an ANSI C.12 certified revenue quality meter for the full contract term. This includes responsive customer service and technical support, provided without further charge to the Municipality.

b. allow users to access live production data online and download data in a spreadsheet format.

C. Commissioning Requirements

1. Commissioning Procedure - At a minimum, the Contractor's sample testing and commissioning plan shall cover:

a. measurement and recording of voltage-open-circuit of every source circuit;

b. performance of inverter startup tests as specified by the inverter manufacturer in the inverter operation manual;

c. measurement of AC power and comparison to predicted power based upon estimated irradiance level;

d. performance of loss of grid test and verification of five minute delay upon restoration of the grid; and

e. measurement and recording of Imp of every source circuit, measured at each combiner box (source circuit measurements should be done under uniform irradiance conditions and the time of the first and last measurements taken at each combiner box should be recorded).

2. The Contractor shall carry out these tasks of the commissioning plan to the satisfaction of the Municipality or its representative.

3. The Contractor shall verify that the data acquisition/display system is functioning properly, comparing independent measurements to data acquisition display.

4. The Contractor shall correct, at no additional cost to the Municipality, any deficiencies uncovered by the testing prior to commissioning of the PV System.

D. Training Requirements

The Contractor shall train the Municipality or staff at the Facility awarded to the Contractor, on operations of the PV System. The training shall cover principles of operation, routine maintenance requirements, on-line data monitoring system, and safety issues that are specific to the PV System installed. An operations manual to accompany the training will be delivered to the Facility.

E. Documentation Requirements

 Documentation – The Contractor shall prepare an Operations and Maintenance manual for the PV System at each Facility. In addition, the Contractor shall provide the Municipality with one (1) printed copy and two (2) digital copies on CD in an Excel spreadsheet in a simple and consistent format that is easy to import into the statewide CAMIS database of the information listed below.
 Post Installation documentation shall include:

a. A complete set of all approved shop drawings, a list of equipment and products used, and product literature. The list of equipment shall include the manufacturer, brand name, model (if applicable), equipment components, recommended maintenance procedures for each piece of equipment, approximate amount of product installed and materials contained in the product.

b. As-built plans showing the final placement of all combiner boxes, connections and conduit placement.

c. As-built electrical plans, including three line diagrams, and elevation drawings showing the final placement of the electrical equipment and the specific point of connection to the building service AC grounding electrode for the PV System ground.

d. Trouble shooting guidelines.

- e. PV System maintenance schedule and procedures.
- f. Contact information for technical assistance and parts ordering.
- g. Records of all warranties and serial numbers of all warranted equipment.

6.7 Response Format Template

Respondents are encouraged to provide a response that specifically addresses each of the items below. MAPC looks favorably upon responses that provide thorough, detailed responses and follow the format below.

i. Management & Performance Capabilities

- a) Describe the general reputation and performance capabilities of the firm and explain how these characteristics translate to optimizing results for the Municipality.
- b) Provide the number of years the Respondent has been engaged in providing renewable energy installation/integration services.
- c) Describe the experience the Respondent has had with municipalities and public school systems, particularly in the Northeast and specifically in Massachusetts. Respondents shall demonstrate by example its experience working in facilities similar to the facilities included in this RFQ.
- d) Provide the number of full-time personnel employed by the Respondent. Please segment the data, as appropriate, into categories of personnel providing services. Provide the number of full-time personnel located in any applicable local or branch office and the site address of that local or branch office.
- e) Discuss any accreditations or pre-qualifications for Project(s) to be developed pursuant to this RFQ, describing the relevance or importance of such qualifications to the project.

ii. Experience & Project References

a) Fully describe at least five (5) projects that Respondent has implemented within the last five (5) years. Please list at least five (5) examples of projects in the Northeast, and if possible, specifically in Massachusetts, which included varying types of mixed-use facilities. Provide the number of projects and aggregate dollar value of projects implemented by Respondent each year for the past five (5) years, including the value of the guarantees related to such projects and any shortfall in savings related to such projects. Provide detailed project information for all five (5) reference projects including: customer name, project dates, total project cost at response stage, total final project cost, projected annual electricity generation, actual realized electricity generation to date, and any shortfalls. Respondent must also indicate whether the project was completed on schedule and on budget, and if not, explain the reasons for such delay or budget noncompliance. A response in table format is preferred.

- a. For each reference, please include the names, addresses, email addresses and telephone numbers. It is understood that the Awarding Authority may contact any or all of the above references regarding the project and personnel performance as part of the RFQ submittal review process.
- b) Identify up to five (5) projects that Respondent has implemented in within the last five (5) years that are that less than 100 kW in capacity. If the Respondent has implemented projects less than 100 kW, describe strategies for keeping costs down.
- c) In addition to standard PV system applications (e.g., rooftop, landfill), Municipalities may also be interested in alternative system applications, such as parking lot structures. Summarize your firm's expertise with any alternative system applications.
- d) List renewable energy equipment types and sizes that Respondent has actually priced or procured and past experience with those technologies.
- e) List renewable energy suppliers that Respondent has worked with and describe the relationship with the supplier.
- f) Please provide an organizational chart. Identify projects that have been managed by individuals who Respondent anticipates will be assigned to Project(s) to be developed pursuant to this RFQ. Discuss the level of technical/economic expertise of the staff. Provide resumes of the project team members and indicate which branch office each project team member is assigned. For each project team personnel, please list the current projects such employee is currently involved with and the status of the project.

iii. Project Approach

- 1. Engineering Study
 - a) Describe Respondent's approach to the technical design of any Project to be developed pursuant to this RFQ, including the methodology Respondent normally uses to compute the performance of the system.
 - b) Describe Respondent's general approach to conducting an engineering study. Specifically, what is the process? How will the Municipality be involved? Detail the level and depth of the information and resources that will be required of the Municipality.
 - c) List all procedures, formulas and methodologies including special metering or equipment, which Respondent would use to calculate output.
 - d) Describe the method(s) used to adjust the output due to such factors as weather, facility use changes and operating behavioral changes. Describe factors that would necessitate adjustment.
 - e) Provide an example of an engineering study for one of the projects described in section a).

- f) Discuss Respondent's application of applying a "risk factor" to annual guaranteed output.
 Does Respondent's firm guarantee an annual level of savings less than the estimated output?
 Describe the procedure to assign dollar values to the savings. Include energy savings as well as maintenance.
- 2. Construction and Testing
 - a) Will your firm install Project(s) to be developed pursuant to this RFQ, or is this work subcontracted out? Will your firm design the Project(s)? For any design work conducted by third-party experts, please identify whether Respondent takes engineering risk including stamping engineering submittals.
 - b) Describe protocols related to management of critical path schedule to ensure timely completion, including willingness to post liquidated damages for delays and performance shortfalls. Discuss Respondent's project management protocols to ensure schedule adherence.
 - c) Provide a list of equipment and manufacturers to be used pursuant to this RFQ and any available insured warranties. Also, describe any commitment or guarantee on the use of specific equipment types or their equivalents.
 - d) Describe Respondent's reporting and client liaison protocols to be employed throughout the construction process. Describe how Respondent would work with current building management and maintenance personnel to coordinate construction activities.
 - e) Discuss the role Respondent takes in managing subcontractors. Will Respondent oversee all work performed by subcontractors, including any work performed during occupied and unoccupied times?
 - f) What quality assurance procedures will you follow to ensure the system design and installation meets all applicable building and electrical codes? Who ho will be responsible for reviewing designs, inspecting the system for compliance with the design and code, and ensuring the system is properly commissioned? Please provide a copy of a commissioning plan previously executed for one of the five (5) reference customers.
- 3. Power Generation
 - a) Describe Contractor's experience in analysis, design, installation and follow-up services of power generation facilities.
 - b) Describe the potential for a web based interactive component of the electric generation.
- 4. Service and Maintenance and/or Owner Training

In your responses to the following, include a description of Respondent's experience with ensuring that equipment warranties and maintenance records are maintained and the requirements of the performance guarantee for savings is met.

- a) Who will be responsible for maintenance of the PV systems over the life of the EMSA contracts?
- b) Summarize any proposed training programs for Municipality maintenance personnel and staff.
- c) Provide the numbers of accessible truck based service and maintenance professionals and describe their level of training and experience.
- 5. Other Factors the MAPC Selection Committee and Municipalities Shall Consider
 - a) Provide specific information regarding experience and expertise with the various types and uses of buildings and facilities under consideration in this RFQ, including but not limited to the particular needs of public schools, public safety buildings, historic buildings and closed landfills.
 - b) Describe the services your firm will provide to identify, abate, and otherwise address hazardous materials that may be present in buildings or facilities under consideration for this Project. Materials may include but not be limited to asbestos and lead.

iv. Method for Guaranteeing Electricity Generation & Determining Savings

Methods for monitoring, measurement, and verification of guaranteed energy shall conform to the most recent Performance Measurement & Verification Protocol (IPMVP) and standards established by the Federal Energy Management Program of the U.S. Department of Energy.

- a) Describe in detail the firm's methodology to determine electricity generation and explain how this approach will minimize risk and maximize return for the Municipalities over the course of up to 20 years. Include in the description, the firm's approach to verifying output and addressing changes based on experience.
- b) Discuss Respondent's general approach to applying the M&V protocol.
- c) Describe Respondent's standard measurement and verification procedures, including reporting frequency, reconciliation methods and timing.
- d) Provide a sample measurement and verification report from one of the five (5) reference projects together with an explanation of how Respondent demonstrated, with respect to such report, whether the guaranteed output level was met and if not, the mechanics of how the customer would be compensated. Redacted copies protecting confidential information will be accepted.

v. Financing Capabilities

- a) Evidence and amount of bond capability from a surety company licensed to do business in the Commonwealth and whose name appears on United States Treasury Department Circular 570.
 Please provide the cost or fee your firm will charge for the performance and payment bonds as a percentage of the construction costs.
- b) Form of legal entity and year entity was established.
- c) Describe any changes in ownership status over the past ten (10) years.
- d) Other entity names, if any.
- e) Ultimate parent company, if applicable.
- f) Federal Tax Identification Number for Respondent
- g) Please submit a detailed financial report prepared in accordance with generally accepted accounting principles (GAAP) reflecting the current (as of the most recent financial statement date) financial condition of the Respondent. Such report must include a balance sheet, income statement and statement of cash flows, along with applicable footnotes, dated concurrently for at least each of the last preceding three years ending on the most recent fiscal quarter such statements were prepared. Public entities or subsidiaries should attach SEC Form 10-K along with, as applicable, detailed unaudited statements for the Submitting Entity. Non-public entities may attach either unaudited financial statements or copies of tax forms and schedules that are filed with the Internal Revenue Service where applicable.
- h) Describe the form of guarantee that the Respondent will be providing in respect of the Project. If a corporate guarantee backstop by a parent company or credit enhancement by a financial institution is anticipated, please provide a letter from the parent company or financial institution, indicating that such credit enhancement is available, the terms of such credit enhancement and the credit rating of the guarantor.
- i) Describe any other factors which would strengthen the credibility of the Respondent's financial capacity to undertake the construction and guarantees proposed in this Response. "Other factors" could include corporate strategies which establish and fund reserves for contingent liabilities accruing from a growing portfolio of performance contracts, escrows, energy hedging, letters of credit or other financial tools. "We have never had to fund a shortfall" is inadequate to strengthen the Respondent's financial credibility.
- j) Lawsuits and Disputes. Discuss whether your firm has ever been involved in a lawsuit or dispute regarding a performance contract. If so, please provide all such incidents and describe the circumstances and outcomes of such lawsuit or litigation. Further, please discuss whether your firm has been barred from providing performance contracting or other services in any states.

Department of Capital Asset Management (DCAM) Certificate of Eligibility (DCAM Form CQ7) and Update Statement (DCAM Form CQ3).

vi. Pricing Methodology

- a) Provide a description of your firm's approach to financing Project(s) to be developed pursuant to this RFQ. Detail any unique features that your approach to project finance offers.
- b) Does your financing approach attempt to minimize financing costs? If so, how, and what impact on the proposed EMSA does that have?
- c) How does your firm plan to monetize the federal 30% investment tax credit? Is there a tax equity investor on your team? If so, who is it?
- d) Please show the assumed value of SRECs over the 20-year contract period you currently use or from other economic assessments (e.g., \$[__]/MWh in year 1, \$[__]/MWh in year 2, etc.). Also briefly describe your strategy to maximize the SREC value (e.g., secure long-term contracts only, spot market).
- e) Will you share the revenues from SRECs with Municipalities? If so, under what SREC market conditions would you share SREC value, and what formula or process do you propose to establish the share for the Municipalities?
- f) Does your approach to purchasing equipment and labor minimize installation costs? If so, how, and what impact on the proposed EMSA does it have?
- g) Discuss how your firm will allocate any financial impacts on proposed pricing caused by changes in financial incentives (availability of SRECs, reduction of federal and/or tax incentives, market value of carbon RECs, etc.)?
- h) How do you plan to incorporate local property taxes, if required? Note the Contractors are responsible for any applicable property taxes levied by Municipalities.
- i) Please describe any other factors that will allow you to provide the communities with the best possible value under a Solar EMSA?

6.8 Response Evaluation Form

Evaluation Form	
Minimum Required Items	Supplied
	(Y/N)
Respondent Information Form & Cover Letter	
Department of Capital Asset Management (DCAM) Certificate of Eligibility (DCAM Form	
CQ7) and Department of Capital Asset Management (DCAM) Update Statement (DCAM	
Form CQ3)	
Certificate of Non-Collusion	
Attestation Regarding Filing of Tax Returns	
Federal Tax Identification Number for Respondent	
Form of Legal Entity, Changes in Ownership, and Other Entity Names	
Financial Statements	
Certificate of Insurance	
Evidence of Bond Capability	-
Performance Guarantee	
Lawsuits and Disputes	
References	
Massachusetts Licensed Professional Engineer	
Contractual Terms – Completed Checklist	
Response Completeness and Adherence to Format	
Evaluation Rating Category	WEIGHT
Management & Performance Capabilities	5%
Experience & Project References	30%
Project Approach	30%
Method for Savings Guarantee	20%
Financing Capabilities & Pricing Methodology	15%



Solar EMS Contracting

MAPC Regional Solar Initiative



Agenda

- Mechanics of a Solar EMS Contract
- Contract Structure and Specifics
- Major Decision Points
- Ongoing Work



What is a Solar EMS Contract?

- A solar Energy Management Services (solar EMS) contract is a long-term (20+ year) contract for services, including:
 - PV system design, financing, and installation
 - Operations, maintenance, and system removal
 - Long-term lease of public space
 - PV Electricity
 - System performance guarantee
- All of these services can be procured under one solicitation via MGL c.25A
- Important: This IS NOT a public works contract. It is a service agreement.



What are the Roles and Responsibilities of the Parties Involved?



Solar Developer

- Design, finance, build PV system
- Long-term O&M
- System removal
- Guarantee production of electricity
- Take SRECs (usually)



Host Community

- Host PV system for 20+ years
- Buy all electricity generated by PV system per a set price schedule (\$ per kWh)



Utility Company

- Take excess generation
- Provide net metering credits to community, where applicable



Price Schedule: Hypothetical Municipal Building

- System capacity: 150 kW
- Estimated Annual Production : 170,000 kWh
- Guaranteed Annual Production: 80% of Estimate = 136,000 kWh
- Year 1 SEMS Rate: 10 cents per kWh
- Annual SEMS Rate Escalator: 2%

Year	Price (\$/kWh)
1	0.0950
2	0.0950
3	0.0950
4	0.0950
5	0.0950
6	0.0950
7	0.0950
8	0.0950
9	0.0950
10	0.0950
11	0.0950
12	0.0950
13	0.0950
14	0.0950
15	0.0950
16	0.0950
17	0.0950
18	0.0950
19	0.0950
20	0.0950


What is a Solar EMS Contract?





What is a Solar EMS Contract?



12/14/2012



What is a Solar EMS Contract?





What is the Long-term Value of a Solar EMS Contract to my Community?



Savings to Community per kWh Produced by PV System = Grid Rate – SEMS Rate

=12 cents/kWh - 10 cents/kWh

=2 cents/kWh

<u>NOTE:</u> Knowing if an SEMS rate is a good or bad deal requires that you know your grid rate with some certainty.



What is the Motivation for Entering into a Solar EMS Contract?

- A **solar Energy Management Services** (solar EMS) contract allows public entities to:
 - Benefit from low-cost solar electricity
 - ...without the costs/risks of ownership (e.g., community has no O&M responsibilities)
 - …at no upfront cost to the community
 - Hedge against volatility of grid electricity pricing
 - Take advantage of solar tax incentives by partnering with a private developer



What are the Economic Benefits to the Developer?





What are Solar Renewable Energy Credits (SRECs)?



Electricity ("Brown Power")

SRECs ("Green Commodity")


• Services: 20+ year contract for the purchase of SEMS services, including PV system design, installation, O&M, and removal, and electricity generation

WHEREAS, User desires to purchase solar-generated electricity for use by User in one or more buildings located on the property of the User (the "*Premises*"), all as set forth in <u>Attachment A</u> attached hereto;

WHEREAS, Developer is in the business of financing, installing, owning, operating and maintaining solar power electric generation facilities;

WHEREAS, Developer proposes to finance, install, own, operate and maintain one or more solar energy facilities (each a "System" and together the "Systems") on the rooftop(s) of certain buildings on the Premises, such Systems being more particularly set forth in <u>Attachment B</u> attached hereto;

(g) <u>Removal of the Systems</u>. Except as otherwise provided herein, Developer shall, within ninety (90) days following the end of the Term and at Developer's sole cost and expense, remove the Systems from the Premises and restore the Premises to its original condition, normal wear and tear excluded.



• **System Ownership:** The PV system, SRECs, and tax incentives are owned by Developer.

IV. FACILITY DEVELOPERSHIP, INSTALLATION, OPERATION, MAINTENANCE, AND REMOVAL

(a) <u>Title</u>. Except as otherwise set forth in this Agreement, as between the Parties during the Term of this Agreement, all ownership of and title to the System, permits, approvals, Environmental Attributes, tax benefits associated with the System shall be with the Developer. Developer shall be the legal and beneficial owner of the System, which System will at all times retain the legal status of personal property of Developer as defined under Article 9 of the Uniform Commercial Code. The System will not attach to or be deemed a part of, or a fixture to, the Premises notwithstanding the manner in which the System is or may be affixed to real property of User. User will not take a position on any tax return or in other filings suggesting that it is anything other than a purchaser of Electricity



• **Purchase and Sale of Electricity:** The Community purchases 100% of the electricity produced by the PV system. The electricity price (\$/kWh) follows the negotiated price schedule.

V. PURCHASE AND SALE; DELIVERY; GOVERNMENTAL CHARGES

(a) <u>Purchase and Sale of Electricity</u>. Commencing on the Commercial Operation Date and continuing throughout the remainder of the Term, Developer shall sell and make available to User, and User shall purchase and take delivery of at the Delivery Point, all of the Electricity generated by the System.



• **Governmental Charges:** These provisions dictate how taxes are treated. For ground-mounted systems, it is important to have a plan for the treatment of property taxes. Comprehensive guidance on how to assess property taxes for these systems, however, is not available at this time.

(e) Governmental Charges.

 Developer is responsible for local, state and federal income taxes attributable to Developer for income received under this Agreement.

(ii) User shall pay directly or reimburse Developer for all sales and use taxes that may be imposed by any Governmental Authority on the sale of Electricity to User. User shall provide Developer with its exemption certificate or documentation which may be necessary for Developer to demonstrate to such Governmental Authority that no sales or use taxes should be imposed on User as a municipal corporation.



• **Performance Guarantee:** Each contract year, if the system does not produce the guaranteed amount of electricity for that year, Developer will reimburse Community for underperformance.

(f) <u>Guaranteed Annual Electric Output</u>.

(i) Developer guarantees that the System will produce the Guaranteed Annual Electric Output in each Contract Year, as adjusted by the Annual System Degradation Factor. On the first anniversary of the Commercial Operation Date and each anniversary of the Commercial Operation Date thereafter during the Term (and any extension thereof), the Guaranteed Annual Electric Output shall be decreased by the Annual System Degradation Factor.



• **Ownership of Environmental Attributes (SRECs):** The contract gives Developer the title to SRECs.

VI. ENVIRONMENTAL ATTRIBUTES

(a) <u>Title to Environmental Attributes</u>. All Environmental Attributes relating to the System or the Electricity will be and remain property of Developer. Developer shall have all right, title, and interest in and to any and all Environmental Attributes that relate to the Electricity during the Term, and User shall have no right, title or interest in or to any such Environmental Attributes. Title to environmental attributes as of the effective date of this Agreement are vested in the Developer and shall remain with the Developer at all times relevant to this Agreement.



• Metering and Meter Accuracy: Developer owns and maintains the meter that determines the amount of electricity produced; however, Community can challenge the accuracy of the meter.

(a) <u>Metering Equipment</u>. The Parties acknowledge and agree that Developer shall provide, install, own, operate and maintain the Metering Device. Developer shall maintain the Metering Device in accordance with all Applicable Legal Requirements.

(c) <u>Testing and Correction/User's Right to Conduct Tests</u>. Each Party and its consultants and representatives shall have the right to witness each test conducted by or under the supervision of Developer to verify the accuracy of the measurements and recordings of the Metering Device.



• **System Loss:** Developer bears the risk of system loss and funds repairs (except in the case of User negligence). The contract envisions two scenarios – partial loss and total loss (if damage results in *total* loss, Developer elects whether or not to repair/replace system).

(ii) <u>Partial Loss.</u> In the event of any System Loss that results in less than total damage, destruction or loss of the System, this Agreement will remain in full force and effect and Developer will, at Developer's sole cost and expense, subject to the provisions below, repair or replace the System as quickly as practicable. To the extent of any System Loss that results in less than total damage, destruction or loss of the System, and is caused by User Misconduct, User shall promptly upon demand therefore from Developer pay any and all costs and expenses of such repair or replacement, including any lost revenues for sales of Electricity and Environmental Attributes based upon the estimated energy production capacity of the System in the relevant Contract Year.



- **Force Majeure:** Force Majeure can excuse the performance of obligations under the contract for up to 12 months.
- **Default:** If the Developer defaults (fails to keep insurance, makes false claim, etc.), the Community can require that system be removed and that the Developer pay a termination payment. This is also true in the reverse.

(c) User Rights Upon Termination for Default. In the event that User is the Non-Defaulting Party and elects to terminate this Agreement as provided in Section IX, User shall, at its sole and exclusive option and in its sole and absolute discretion, either (i) require Developer to remove the System as provided in Section IV above and pay the Developer Termination Payment, or (b) exercise the Purchase Option provided in Section XIII below and require the Developer to pay the Developer Termination Payment. In the event that User elects either of the foregoing remedies, such express remedy and any associated measure of damages shall be the sole and exclusive remedy available to User as a result of termination of this Agreement subject, however, to subsection (h) below.



- **Invoicing and Payment:** Community has a given number of days to pay monthly invoice for electricity from the PV system.
- **System Purchase and Sale:** Community can purchase the PV system during the contract term. The system's cost is determined by an independent appraiser.

XIII. SYSTEM PURCHASE AND SALE OPTIONS

(a) <u>Grant of Purchase Option</u>. For and in consideration of the payments made by User under this Agreement, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged by the Parties, Developer hereby grants User the right and option to purchase all of Developer's right, title and interest in and to the System and the Environmental Attributes on the terms set forth in this Agreement (the "*Purchase Option*").



- **Representations and Warranties:** Best practice to have local counsel review
- Limitations: Best practice to have local counsel review
- Indemnification: Best practice to have local counsel review
- **Dispute Resolution:** Best practice to have local counsel review
- Assignment: Developer may transfer its obligations under the agreement to another party

(a) <u>Assignment: Binding Effect</u>. Developer shall not, without the prior written consent of User, which consent will not be unreasonably withheld or delayed, assign, pledge or transfer all or any part of, or any right or obligation under, this Agreement, whether voluntarily or by operation of law, and any such assignment or transfer without such consent will be null and void; provided, however, that Developer may, with only prior written notice to User, assign, pledge or transfer all or any part of, or any right or obligation under this Agreement for security purposes in connection with any financing or other financial arrangements regarding the System (each, a "*Permitted Transfer*"); provided, however, that such assignment shall not relieve the Developer of its obligations under this Agreement. Developer shall deliver notice of any Permitted Transfer to User in writing as soon as reasonably practicable.



• **Site Access:** License component of the SEMS contract gives Developer the right to occupy the space.

5. During the Term (unless the Agreement is earlier terminated), USER agrees that it shall not grant any license or other interest in and to the Licensed Area that would materially interfere

with the License granted to Developer that would permit or cause shading of the System or that would otherwise materially impair Developer's ability to obtain the benefit of its rights and to perform its obligations under this Agreement.

 Developer hereby covenants to pay USER, on or before the Commercial Operation Date, and on or before each anniversary of the Commercial Operation Date during the Term, as and for rent of the License Area, \$1.00 (one U.S. dollar).



EMS Contract Negotiations

- General Recommendations
 - Change-in-Law
 - Performance guarantee
 - Force Majeure & vandalism
 - Emergency repairs
 - Net metering regulatory risk
 - Bonding

- Major decision points
 - Taxes
 - Timelines
 - Default assurance mechanism
 - Extras: CORI checks, educational package, etc.
 - Project locations/size
 - Pricing (per kWh rate and % escalation)



Ongoing Work

- Do solar installation conflict with your competitive supply contract?
- What are the ages of the roofs in question? How many years remain on the warranties?
- Are any zoning changes required?
- How does the community want to treat property taxes (ground-mounted PV systems only)?
- What is the SEMS contract approval process in my community?
- Is some kind of local outreach needed?
- Are local interconnection & net metering policies in place (MLPs only)?



Questions?

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