

*MEASUREMENT AND VERIFICATION AGREEMENT
FOR
CITY OF PATTERSON*

SCOPE OF SERVICES

TERMS AND CONDITIONS

ATTACHMENTS:

Attachment 1 – Guaranteed Savings Measurement & Verification

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- Measurement and Verification Methods
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MEASUREMENT & VERIFICATION AGREEMENT

This Measurement and Verification (“M&V”) Agreement (“Agreement”) dated ___/___/___ (“Effective Date”) is made by and between:

City of Patterson, a California municipal corporation
 (“Purchaser”) with its principal place of business at
 1 Plaza, P.O. Box 667, Patterson, CA 95363

and

Alliance Building Solutions, LLC.
 (“ABS”) with its principal place of business at
 12520 High Bluff Drive, Ste 345, San Diego, CA 92130

Purchaser and ABS may be referred to hereinafter individually as a “Party” or collectively as the “Parties.” There are no other parties to this Agreement.

RECITALS

- A. ABS is a full-service energy service contractor with the qualifications and technical capabilities to provide the services described in this Agreement and desires to enter into this Agreement with the City.
- B. Purchaser wishes to engage ABS, pursuant to the terms and conditions of this Agreement, to provide Purchaser with measurement and verification services of the energy savings associated with Purchaser’s Energy Efficiency and Renewable Energy Program.
- C. This Agreement constitutes an “energy service contract” within the meaning of Government Code Section 4217.10 et seq.
- D. Government Code Section 4217.10 et seq. (i) authorizes public agencies to enter into energy service contracts that satisfy the requirements of California Government Code Section 4217.12, (ii) allows public agencies to award such energy services contracts on the basis of the experience of the contractor, the type of technology employed by the contractor, the cost to the public agency, and any other relevant considerations, and (iii) expressly provides public agencies with the greatest possible flexibility in structuring such energy service contracts so that economic benefits may be maximized and financing and other costs associated with the design and construction of alternate energy projects may be minimized.
- E. The City Council for the City of Patterson has determined that the work to be provided by ABS under this Agreement satisfies the requirements of Government Code Section 4217.12 and has further determined, at a regularly scheduled public hearing of which public notice was given at least two weeks in advance, that the terms of this Agreement are in the best interests of the Purchaser.

NOW THEREFORE, in consideration of the foregoing and of the respective rights and obligations of the Parties set forth herein, the Parties agree as follows:

AGREEMENT

SCOPE OF SERVICES

Energy Savings Measurement & Verification Service:

“ABS” will provide measurement and verification services of the energy savings associated with “Purchaser” Energy Efficiency and Renewable Energy Program, as described in “Scope of Work” attached to the Energy Efficiency and Renewable Energy Program Installation Agreement (“Installation Agreement”). Energy Savings M&V reports will be provided to the “Purchaser” on an annual basis for the term specified below.

Term:

This Service Agreement shall commence upon the completion and acceptance of the Purchaser of the Energy Efficiency and Renewable Energy Program and receipt of final payment for the Installation Agreement and shall continue for an initial term of three (3) years. The “Purchaser” may elect to enter into further extended terms upon written notice provided to ABS not less than thirty (30) days prior to termination of the initial term. If the “Purchaser” fails to provide ABS with a written notice of extension prior to the end of the initial term or any subsequent extensions, ABS shall notify City in writing that the M&V Agreement shall be considered terminated if the City does not request an extension within thirty (30) days of the City’s receipt of ABS’s notification. Under no circumstances shall the M&V Agreement be considered terminated without ABS providing thirty (30) days’ written notice giving the City an opportunity to extend the M&V Agreement. Once terminated, the M&V Agreement cannot be renewed. The “Purchaser” may terminate this service agreement at any time with a (30) day written notice. However, termination of this agreement will void any savings guarantee associated with the Energy Efficiency and Renewable Energy Program.

Charges:

This Agreement shall be billed once per year after the first three years, and amount owed is due and payable 30-days after “Purchaser’s” receipt of invoice. The annual Service Agreement charge is \$0 for the first three years, \$20,000 for the fourth year and escalated at 4% annually for every subsequent year thereafter.

TERMS AND CONDITIONS

I. General Provisions:

- I.1 Unless stated otherwise, the services provided under this Agreement shall be provided during “ABS” normal business hours. Normal business hours are Monday through Friday, 7:00AM to 4:00PM Pacific Time, excluding holidays. “ABS” will coordinate with the “Purchaser” so that any variations in these normal business hours necessitated by “Purchaser” Schedules can be accommodated.
- I.2 The “Purchaser” shall provide reasonable means of access to the equipment being measured or verified. “ABS” shall not be responsible for any removal, replacement, or refinishing of the building structure, if required to gain access to the equipment. “ABS” shall be permitted to start and stop all equipment necessary to perform the services herein described as arranged with the “Purchaser’s” representative. “ABS” will obtain agreement from the “Purchaser’s” representative prior to any starting or stopping of equipment.
- I.3 This Agreement shall supersede any previous Measurement and Verification Agreements accepted and approved by the “Purchaser” and “ABS.”
- I.4 This Agreement, when accepted in writing by the “Purchaser” and approved by an authorized “ABS” representative, shall constitute the entire Agreement between the two (2) parties.

II. Charges:

- II.1 For services not covered by this Agreement but performed by “ABS” upon the “Purchaser’s” prior written authorization, the “Purchaser” agrees to pay “ABS”’s invoice(s) 30 days after receipt of invoice. Failure to pay the invoice within 30 days after receipt will result in a 10% late payment penalty.
- II.2 If emergency service is requested, ABS will provide Purchaser with a written proposal for the inspection and work and a cost estimate. ABS will only commence emergency service after Purchaser accepts the proposal and cost estimate in writing. If emergency service is requested by the “Purchaser” and inspection does not reveal any defect for which “ABS” is liable under this Agreement, the “Purchaser” will be charged at “ABS”’s emergency charge rates. ABS’s emergency charge rates shall be seven hundred fifty dollars (\$750) per hour in year 1 of this Agreement and shall escalate at 5% annually thereafter.

III. Limitations of Liability:

- III.1 Neither party shall be liable for any loss, delay, injury, or damage that may be caused by circumstances beyond its control including, but not restricted to: acts of God, war, civil commotion, acts of government, fire, theft, corrosion, floods, lightning strikes, freezes, strikes, lockouts, differences with workmen, riots, explosions, quarantine restrictions, delays in transportation, shortage of vehicles, fuel, labor or materials, or malicious mischief. IN NO EVENT, SHALL EITHER PARTY BE LIABLE FOR BUSINESS INTERRUPTION, LOSSES, CONSEQUENTIAL, INDIRECT, SPECIAL OR SPECULATIVE DAMAGES.
- III.2 “ABS” shall not be required to make safety tests, install new devices, or make modifications to any equipment to comply with recommendations or directives of insurance companies, governmental bodies, or for other reasons.
- III.3 Section removed.
- III.4 “ABS” warrants that for equipment furnished and/or installed but NOT manufactured by “ABS”, “ABS” will extend the same warranty and terms and conditions, which “ABS” received from the manufacturer of said equipment.
- III.5 This agreement pre-supposes that all equipment associated with the Energy Efficiency and Renewable Energy Program is in satisfactory working order. Should any equipment be in need of repair, “ABS” will have ninety (90) days to make such repair upon ABS discovering the need for repair or notification from Purchaser. If the “Purchaser” does not authorize “ABS” to make the repairs or if the “Purchaser” does not have the work performed, the Agreement saving will be adjusted to account for the equipment that is not functioning properly due to needed repairs. Maintenance of existing equipment and systems that are not associated with the Energy Efficiency and Renewable Energy Program are the responsibility of the “Purchaser”. Failure to properly maintain equipment and systems can result in reduced energy efficiency and may necessitate a baseline energy adjustment.
- III.6 The amount of any present or future sales, use, occupancy excise, or other tax (federal, state or local) which “ABS” hereafter shall be obligated to pay, either on its own behalf or on the behalf of the “Purchaser” or otherwise, with respect to the services covered by this Agreement, shall be paid by the “ABS”. Purchaser shall reasonably assist “ABS” in determining the applicable requirements, but it shall be ABS’s sole responsibility for determining and complying with all applicable laws, regulations and standards.
- III.7 If the equipment or software included under this Agreement is altered, modified, or changed by a party other than “ABS”, this Agreement shall be modified to incorporate such changes the Agreement price and/or Savings shall be adjusted accordingly.
- III.8 Following twelve (12) months of service or any time thereafter, if individual item(s) cannot, in “ABS”’s opinion, be properly repaired on-site because of excessive wear, deterioration or an Act of God that is out of “ABS” control.

“ABS” may withdraw the item(s) from coverage upon ninety (90) days prior written notice. Energy savings may be adjusted accordingly.

III.9 This agreement shall be governed by, construed, and enforced in accordance with the laws of the State of California. Venue for all legal proceedings shall be in the Superior Court for the County of Stanislaus.

IV. Miscellaneous Provisions:

IV.1 The services provided hereunder may occur on active “Purchaser” sites. As such, “ABS” shall ensure that its services on and around the “Purchaser” site comply with all applicable laws, regulations and standards including but not limited to, the fingerprinting requirements and any other legal requirements which maybe applicable to “ABS”’s activities on or about the “Purchaser” sites. The “Purchaser” shall reasonably assist “ABS” in determining the applicable laws, regulations and standards.

IV.2 Dispute Resolution:

IV.2.1 Disputes: This section shall apply to any disputes arising under our related to this Agreement whether arising in contract, tort or otherwise, and whether arising at law or in equity including (a) any dispute regarding the performance, validity or enforceability of any provision of this Agreement or whether any party is in compliance with, or breach or, any provisions of this Agreement and (b) the applicability of this Section to a particular dispute. Any dispute to which this section applies is referred to herein as a “Dispute”.

IV.2.2 Negotiation to Resolve Disputes: If a dispute arises, the Parties shall attempt to resolve such dispute through the following procedure.

IV.2.2.1 First, the representatives of each of the Parties shall promptly meet (whether by phone or in person) in a good faith attempt to resolve the Dispute;

IV.2.2.2 Second, if the Dispute is still unresolved after 20 days following the commencement of the negotiations described in Section 4.2.2.1 then a designated executive officer to each party shall meet (whether by phone or in person) in a good faith attempt to resolve the Dispute;

IV.2.2.3 Third, if the Dispute is still unresolved after 10 days following the commencement of the negotiations described in Section 4.2.2.2, then either Party may submit such Dispute to litigation;

IV.2.2.4 The venue for any Dispute arising from or relating to this Agreement that is adjudicated pursuant to this Section 4.2.2.4 shall be arbitrated in Stanislaus County, California. Any Dispute arising from or relating to this Agreement that is adjudicated pursuant to this Section 4.2.2.4 shall be arbitrated in Stanislaus County, California. The arbitration shall be administered by JAMS or another mutually agreed upon arbitrator in accordance with its Comprehensive Arbitration Rules and Procedures, and judgment on any award maybe entered in any court of competent jurisdiction in Stanislaus County, California. If the Parties agree, a mediator may be consulted prior to arbitration;

IV.2.2.5 Pending a final resolution of a Dispute, the Parties shall each proceed diligently and faithfully with performance of their respective obligations under this Agreement.

IV.3 Indemnification:

To the fullest extent permitted by law (including, without limitation, California Civil Code Sections 2782 and 2782.8), ABS shall defend, indemnify, hold harmless, and release Purchaser, and Purchaser’s elected and appointed councils, commissions, directors, officers, employees, agents, and representatives (“Purchaser’s Agents”) from and against any and all actions, claims, loss, cost, damage, injury (including, without limitation, disability, injury or death of an employee of ABS or its subcontractors), expense and liability of every kind, nature and description to the extent caused in whole or in part by ABS’s negligence or relate to acts or omissions of ABS, or any direct or indirect subcontractor, employee, contractor, representative or agent of ABS, or anyone that ABS controls (collectively “Liabilities”). Upon receiving notice of a claim, ABS shall assume the defense of the claim, action, or proceeding through the prompt payment of all attorneys’ fees and costs, incurred in good faith and in the exercise of reasonable discretion, of Purchaser’s counsel in defending such an action. Purchaser shall have the absolute and sole authority to control the litigation and make litigation decisions, including, but not limited to, selecting counsel to defend Purchaser and settlement or other disposition of the matter. Such obligations to defend, hold harmless and indemnify Purchaser and Purchaser’s Agents shall not apply to the extent that such Liabilities are caused in whole or in part by the negligence, active negligence, or willful misconduct of Purchaser or Purchaser’s Agents, but shall apply to all other Liabilities. With respect to third party claims against ABS, ABS waives any and all rights of any type of express or implied indemnity against Purchaser and Purchaser’s Agents. This indemnification obligation is not limited in any way by any limitation on the amount or type of damages or

compensation payable to or for ABS or its agents under workers' compensation acts, disability benefits acts or other employee benefit acts.

Neither termination of this M&V Agreement nor completion of the acts to be performed under this M&V Agreement shall release ABS from its obligations to indemnify the Purchaser and Purchaser's Agents.

Submission of insurance Certificates or other proof of compliance with the insurance requirements in the Installation Agreement does not relieve ABS from liability under this indemnification clause. The obligations of this indemnity shall apply whether or not such insurance policies shall have been determined to be applicable to any of such damages or claims for damages.

ABS shall require each of its Subcontractors to comply with the requirements of this section related to indemnifying, holding harmless, defending, and releasing Purchaser and Purchaser's agents.

- V. **NOTICES.** All notices or other communications required or permitted hereunder shall be in writing and shall be personally delivered or sent by registered or certified mail, postage prepaid, return receipt requested. Notice shall be deemed received upon the earlier of (i) if personally delivered, the date of delivery to the address of the person to receive such notice, (ii) if mailed, three (3) business days after the date of posting by the United States post office, postage prepaid, or (iii) if delivered by Federal Express or other overnight courier, the date delivered as shown on a receipt issued by the courier.

ABS: Alliance Building Solutions, LLC
12520 High Bluff Drive, Ste 345
San Diego, CA 92130

Purchaser: City of Patterson
1 Plaza
P.O. Box 667
Patterson, CA 95363
Attention: City Manager

Copy to: White Brenner LLP
1608 T Street
Sacramento, CA 95811
Phone: 916-468-0950
Attention: Nubia Goldstein

- VI. **Occupational Safety and Health:** The Parties hereto agree to notify each other immediately upon becoming aware of any alleged violations of the Occupational Safety and Health Act (OSHA) relating in any way to the project or project site.

- VII. **INDEPENDENT CONTRACT.** It is agreed between "Purchaser" and "ABS" that "ABS" shall perform the work as an independent contractor. "ABS" may use subcontractors to perform work hereunder, provided "ABS" shall fully pay said subcontractors and in all instances remain fully responsible for (a) the proper completion of this Agreement and (b) supervising such subcontractor's work and for the quality of the work they produce. ABS shall ensure that each of the subcontractors holds all licenses legally required for the practice of its profession and in the classification(s) required for their respective work under this Agreement. ABS shall bind every subcontractor to the applicable terms of this Agreement. Nothing contained in this Agreement shall create any contractual relationship between any subcontractor and Purchaser nor shall the Agreement be construed to be for the benefit of any subcontractor.

ABS represents and warrants that neither it, nor any of its subcontractors, has been debarred by the California Labor Commissioner pursuant to Section 1777.1 of the California Labor Code or otherwise.

ABS represents and warrants that it is an equal opportunity employer and agrees that it shall not discriminate in violation of any applicable federal, state, or other law, rule or regulation, including, but not limited, to discrimination against any employee or applicant for employment on account of such person's race, religion, color, national origin, ancestry, sex, or age. ABS shall apply such policy of non-discrimination in connection with all activities related to ABS's employees and subcontractors, including with respect to initial employment, promotion, demotion, transfer, recruitment or recruitment advertising, and layoff or termination.

This contract is subject to prevailing wage law, including, but not limited to, California Labor Code Sections 1773.2 and 1775. ABS acknowledges that the Work will be subject to compliance monitoring and enforcement by the California Department of Industrial Relations ("DIR"). ABS shall be responsible for ensuring that it and all of its Subcontractors are currently and properly registered with the DIR. ABS and each of its subcontractors shall comply with all applicable provisions of the California Labor Code ("Labor Code") and the regulations promulgated thereunder (collectively, the "Labor Laws"), including, without limitation, any applicable Labor Laws requiring the payment of prevailing wages, submission of payroll records for inspection, posting of required notices at the Project Site, and cooperation with the DIR.

VIII. COMPLIANCE WITH LAWS. "ABS" shall comply with all applicable Federal, State and local laws and regulations. All licenses and permits required for the prosecution of the work shall be obtained and paid for by "ABS". Each and every provision required by any Applicable Law to be included in this Agreement is hereby deemed to be so included, and this Agreement shall be construed and enforced as if all such provisions are so included.

IX. INSURANCE. "ABS" will maintain comprehensive liability and other insurance in the amount not less than those set forth below.

IX.1 General Liability Insurance. A policy of commercial general liability insurance, written on an "occurrence" basis, providing coverage with not less than \$1,000,000 per occurrence for bodily injury, personal injury & property damage and must include a separate endorsement naming the "Purchaser", its elected officials, its officers, agents and employees as additional insurance ("General Liability Policy"). The General Liability Policy shall include coverage for the contractual liability assumed by the ABS pursuant to this Agreement.

IX.2 Vehicle Liability Insurance. A policy of business vehicle liability insurance, written on an "occurrence" basis, with a combined single limit of not less than \$1,000,000 per accident for bodily injury and property damage ("vehicle Liability Policy"). The vehicle Liability Policy shall include coverage for owned, hired, and non-owned automobiles.

IX.3 Worker's Compensation Insurance. Worker's compensation insurance as required by State law and employer's liability insurance, written on an "occurrence" basis, with coverage in an amount not less than \$1,000,000. Notwithstanding the insurer rating standards set forth in this Agreement, coverage provided by the State Compensation Insurance Fund shall be deemed, with respect to the workers' compensation insurance, to satisfy such insurer rating standards.

IX.4 Professional Liability Insurance. Professional liability insurance with coverage in an amount of not less than \$1,000,000 (Professional Liability Policy"), which the "Purchaser" acknowledges shall be written on a "claims made" basis. The Professional Liability Policy shall provide coverage for claims arising out of the performance of the Scope of Services pursuant to this Agreement. If an aggregate limit applies, such aggregate limit in the Professional Liability Policy shall not be less than \$2,000,000. Prior to commencing the Scope of Services, and, if applicable, upon replacing the original Professional Liability Policy, the ABS shall provide the Purchaser a copy of any and all applicable claims-reporting requirements. Notwithstanding anything to the contrary: (i) ABS shall have the Professional Liability Policy, as described herein, in full force and effect prior to commencing the Scope of Services; (ii) each renewal or replacement of the Professional Liability Policy shall have a retroactive date that is prior to the date the ABS commenced the Scope of Services; and (iii) as a condition to final payment to ABS pursuant to this Agreement. If the claims reporting period applicable to the scope of Services, as specified in or determined pursuant to the Professional Liability Policy for the Scope of Services, will Terminate prior to the end

of the two-year period following final payment to ABS pursuant to this Agreement, then ABS, as its cost, shall obtain and provide satisfactory evidence to the Purchaser of: (i) an endorsement to extend the claims reporting period to include whatever will remain of such two-year period; or (ii) a supplemental extended reporting period (tail) applicable to the Professional Liability Policy as required to provide coverage until the end of such two-year period. Such tail coverage shall be required, for example; (i) if ABS intends to switch insurance carriers and the prospective new carrier will not agree to cover claims arising from the Scope of Services submitted at any time prior to the end of the two-year period following final payment to ABS pursuant to this Agreement; (ii) if ABS's business is to be wound-up or otherwise terminated, whether voluntarily or involuntarily; or (iii) when necessary for any other reason to ensure that professional liability insurance applicable to the Scope of Services is in effect at all times required by this Agreement.

- IX.5 Insurer Rating Standards. The insurance policies required pursuant to this section must be issued by one or more insurers that are (i) licensed to do business in the State of California and (ii) have an A.M. Best Company rating of not less than "A-" and a financial size category of not less than "VII."
- IX.6 Duration of Insurance. Except as provided in this Agreement with respect to insurance written on a "claims made" basis, the ABS shall maintain the insurance required pursuant to this Agreement in effect at least until the date that is one year following final payment to the ABS pursuant to this Agreement.
- IX.7 Additional Insured's. The "Purchaser", its elected officials, officers, employees, and agents shall all be named as additional insured, to the extent of the ABS's acts and omissions in connection with this Agreement, on all insurance that the consultant is to have in effect pursuant to this agreement, excepting the workers' compensation insurance and the Professional Liability Policy.
- IX.8 Waiver of Subrogation. ABS hereby waives, on behalf of its insurers, any and all rights to subrogation that any such insurer may acquire by virtue of the payment of any loss. Each of the General Liability Policy and The Vehicle Liability Policy shall be endorsed with a cross-liability endorsement and a waiver of the insurer's rights of subrogation against the "Purchaser". The policy of worker's compensation insurance shall be endorsed with a waiver of the insurer's rights of subrogation.
- IX.9 ABS's Insurance is Primary. To the extent permitted by law, insurance policies required by this Agreement to be maintained by the consultant shall be primary and non-contributing with respect to any insurance or self-insurance programs covering the "Purchaser" or "Purchaser's" Council members thereof, or the "Purchaser's" other officers, employees or agents. The General Liability Policy and the Vehicle Liability Policy shall be endorsed to provide that they are so primary and non-contributory.
- IX.10 Evidence of Coverage. Prior to commencing the Scope of Services, the ABS shall provide to the "Purchaser" or "Purchaser" such duly-authorized and executed certificates of insurance evidencing that the insurance policies to be maintained by the ABS pursuant to this Agreement are in effect (each a "certificate of Insurance"), together with a copy of each endorsement to such insurance as is required pursuant to this Agreement. The delivery of such Certificates of Insurance and endorsements shall be a condition precedent to ABS commencing any of the Scope of Services. As applicable, the Certificate of Insurance shall identify those who are additional insured's in accordance with this Agreement. Not less than Thirty days prior to the expiration of any insurance policy that the ABS is required to maintain pursuant to this Agreement, the ABS shall provide updated Certificates of Insurance to the "Purchaser" evidencing the renewal of such policy.
- IX.11 Notice of Changes in Policies. Each certificate of Insurance and corresponding policy of insurance required pursuant to this Agreement shall expressly require, or be endorsed to require, that the insurer notify the "Purchaser" not less than thirty days prior to any cancellation, termination, reduction in coverage, or expiration without renewal of any such insurance policy, except for cancellation due to non-payment of premium, in which case the insurer shall provide such notice not less than ten days prior to cancellation. Language in any Certificate

of Insurance or policy of insurance to the effect that the insurer shall “endeavor” to provide such notice shall not be acceptable.

IX.12 **Subcontractor Insurance.** ABS shall require that each of its Subcontractors comply with substantially the same requirements as are set forth in this Insurance section, except to the extent Purchaser has approved any different standards or requirements applicable to any particular Subcontractor.

- X. **Audits:** ABS shall keep and maintain all such books and records as are necessary for proper administration and performance of the Agreement and/or as are required by law and/or this Agreement to be maintained (to the extent exclusively related to the performance of the Agreement, “Project Records”), including, but not limited to, plans and specifications, Change Orders, submittals, cut-sheets, projected energy-savings calculations, requests for information, written notices, permits, testing and inspection reports, and safety records. In accordance with Government Code Section 8546.7, the State has the right to examine, review, audit and/or copy the Records of the work during the three (3) year period following final payment to the Contractor pursuant to the Contract. In addition, the “Purchaser” hereby has the right to examine, review, audit and/or copy the Records of the work during the three (3) year period following final payment to the Contractor pursuant to the Contract. Therefore, the Contractor shall make the Project Records available at its offices at all reasonable times during the performance of the Work and for three (3) years from the date of final completion or filing of a Notice of Completion for the Project, whichever is later. However, if any audit is commenced within such three (3) year period, the Contractor shall make the Project Records available at all reasonable times until proceedings related to such audit are complete and all statutes of limitations related thereto have expired. In the event the “Purchaser” notifies the Contractor that federal funds have been used in connection with Project, the Contractor shall retain and make available the Project Records for such longer period as may be required by federal law.
- XI. **Entire Agreement:** This Agreement, upon acceptance, shall constitute the entire agreement between the parties and supersedes any prior representations or understandings.
- XII. **Changes:** No change or modification of any of the terms and conditions stated herein shall be binding upon either Party unless accepted by both Parties in writing.
- XIII. **Severability:** If one or more of the provisions of this Agreement are held to be unenforceable under laws, such provisions(s) shall be excluded from these terms and conditions and the remaining terms and conditions shall be interpreted as if such provision were so excluded and shall be enforced in accordance to their terms and conditions.
- XIV. **Counterparts:** This Agreement may be executed in multiple counterparts, each of which shall be deemed an original and all of which together shall constitute one and the same instrument. A signature on a copy of this agreement received by either party by facsimile or portable document format (PDF) is binding upon the other party as an original. The parties shall treat a photocopy of such facsimile as a duplicate original.
- XV. **Waiver:** A waiver by a Party of any provision of this Agreement shall be binding only if the waiver is set forth in writing and has been duly approved and signed by the waiving Party. Unless so specified in the written waiver, a waiver by a Party of any provision of this Agreement shall not constitute a waiver of any other provision(s) herein, similar or not, and shall not be construed as a continuing waiver. Except as waived in accordance with this Section, a Party’s failure to require performance of any requirement of this Agreement shall not, in any manner, affect the Party’s right to enforce the same or any other provision of this Agreement at a later time.
- XVI. **Assignment:** Neither Party to this Agreement may assign any right or obligation pursuant to this Agreement without agreement in writing from the other Party. Any attempt or purported assignment of any right or obligation pursuant to this Agreement without the written agreement of the other Party shall be void and of no effect. Subject to the foregoing, this Agreement shall inure to the benefit of, and be binding on, the Parties’ authorized successors and assigns.
- XVII. **Third Parties:** Except as otherwise expressly provided herein, the execution and delivery of this Agreement shall not be deemed to confer any rights upon, nor obligate any of the Parties, to any person or entity other than the Parties.
- XVIII. **Acknowledgement:** Both “ABS” and the “Purchaser” acknowledge having read this Agreement and all contract documents incorporated herein and have executed this agreement on the date written above.

XIX. Approval: Each Party represents that the person that has executed this Agreement on its' behalf is authorized to do so.

City of Patterson

Signature

Title

Date

Alliance Building Solutions, LLC.

Signature

Title

Date

Attachment 1

Guaranteed Savings Measurement & Verification

Guaranteed Savings Measurement & Verification

This document contains the Measurement and Verification (M&V) plan for the energy savings related to the Energy Efficiency Measures (EEMs) contained in the Installation Agreement. The following table summarizes the EEMs implemented in these Phases of work.

Site	Lighting Upgrades	HVAC Upgrades	Controls Upgrades	Electrical Upgrades	Building Envelope Upgrades	Renewable Energy
Aquatic Center	X		X			
City Hall	X	X	X		X	X
Corporate Yard	X	X	X			
Fire Station #1	X	X	X		X	X
Fire Station #2	X	X	X			X
Old Corporate Yard	X					X
Senior Center	X		X			
WWTP South	X			X		X
Well 8						X
Well 9						X
Well 11						X

For each EEM, a specific M&V plan is submitted to provide a comprehensive overall plan for the City of Patterson. Energy savings shall be compared to the Utility Baseline Summary, as shown in Attachment 2. Each EEM’s M&V Plan provides:

- A description of how the savings shall be verified.
- The selection of the specific protocol of verification of savings.
- The requirements for measurement or other means to establish savings.

ABS is responsible for pre-retrofit measurements, energy savings calculations, equipment installation, and required post retrofit verification as outlined herein. Purchaser agrees to operate and maintain all equipment installed. Proper operation and maintenance of equipment and systems is critical to long-term achievement of energy savings.

Savings Guarantee

As of the date hereof, ABS guarantees that Purchaser shall realize total annual project savings (utility savings, operational savings, capital cost avoidance, rebates and Solar ITC) as shown in the table below. Notwithstanding the foregoing or anything to the Contrary contained herein, Purchaser hereby agrees that (i) ABS's expectation regarding the annual project savings is an estimate, (ii) ABS's expectation regarding the project savings are based on IRS rules and regulations as of the date hereof, and (iii) ABS shall not be liable for any changes or amendments to the IRS rules and regulations after the date hereof. Additionally, Purchaser hereby agrees that Purchaser shall be solely responsible for the application required for Purchaser to claim any tax credits related to the Solar ITC. The effective date will begin on the date of final acceptance of the Energy Efficiency and Renewable Energy Program and receipt of final payment for the associated Installation Agreement. The total project savings will exceed the Installation Agreement Contract Amount and M&V payments associated with this M&V Agreement during the course of the useful life of the installed equipment. ABS agrees to complete the M&V Report on an annual basis and deliver to the Purchaser within one hundred and twenty (120) days of the anniversary date of final acceptance and annually thereafter. Project savings that are verified during the course of construction will be applied to the 1st year guaranteed project savings.

If the annual M&V Report demonstrates that the project will achieve one hundred percent (100%) or more of the Guaranteed Project Annual Savings, then ABS shall have satisfied its energy performance guarantee obligation and the Purchaser shall accept the Annual M&V Report.

In the event that an annual M&V Report savings value (including any excess savings from previous years) does not meet the Guaranteed Project Savings in accordance with the M&V Plan, then ABS shall repair, replace, or substitute the EEM that is not performing at the required level, as identified in the M&V Report. Following corrective action, ABS shall re-perform the relevant M&V work for the affected EEM(s) and amend or supplement the M&V Report. If the sum of the EEMs indicates that the Guaranteed Project Savings are met or exceeded, then no further remedy shall be required.

If, after the opportunity to make corrections, the M&V Report, as amended, indicates that verified savings are less than the Guaranteed Project Savings as shown in the Savings Summary, then ABS shall pay the Purchaser the shortfall amount.

The Purchaser agrees that project savings, which exceed the guaranteed amount in any one (1) year, may be applied to previous or future year's savings to offset an energy savings shortfall. The savings guarantee will remain in effect for the term of this agreement. Cancellation of this agreement will result in the termination of the savings guarantee.

The Utility Baseline Summary, as shown in Attachment 2, may be modified over the course of the Guarantee Period to adjust for changes in utility rates, number of days in utility billing cycle, missing bills, missing meters, square footage, energy using equipment, building occupancy and weather. This Guarantee is subject to the Purchaser's adherence to the Control Parameters for Lighting and HVAC systems, as documented in the Installation Agreement Attachments. This guarantee assumes the annual utility rate escalator of 4% and the annual solar production at 100% of the estimated solar production in kWh.

Year	Guaranteed Savings
1	\$203,390
2	\$212,286
3	\$286,632
4	\$358,523
5	\$372,530
6	\$387,050
7	\$402,107
8	\$417,718
9	\$433,908
10	\$450,694
11	\$468,102
12	\$486,155
13	\$504,878
14	\$524,295
15	\$544,434
16	\$565,323
17	\$586,990
18	\$609,464
19	\$632,776
20	\$642,010
Total	\$9,089,265

Measurement and Verification Methods

Measurement and Verification (M&V) of energy savings is a methodology based on standard industry protocol intended to provide reasonable assurance that energy savings calculated are realized over the term of the contract.

The development of the M&V plan is based on the International Performance Measurement and Verification Protocol (IPMVP): Concepts and Options for Determining Energy and Water Savings, Volume 1. This plan contains methodology that shall provide verification of the estimated program savings through direct utility billing comparisons, engineering calculations and/or field measurements.

M&V methods can differ based on the type, size and complexity of the project, as well as the availability of data, level of assurance of saving, financing constraints, and energy costs. The M&V methods used for this project are detailed herein and were selected to be the most cost effective while still providing a reasonable assurance of the savings calculations.

IPMVP 2012 Volume 1 provides an overview of the IPMVP Options, as illustrated below:

M&V Option	M&V Methodology Description	How Savings Are Calculated
Option A Retrofit Isolation: Key Parameter Measurement	Savings are determined by field measurement of the key performance parameter(s) which define the energy use of the EEM’s affected system(s) and/or the success of the project. Measurement frequency ranges from short-term to continuous, depending on the expected variations in the measured parameter, and the length of the reporting period. Parameters not selected for field measurement are estimated. Estimates can be based on historical data, manufacturer’s specifications, or engineering judgment. Documentation of the source or justification of the estimated parameter is required. The plausible savings error arising from estimation rather than measurement is evaluated.	Engineering calculation of baseline and reporting period energy from short-term or continuous measurements of key operating parameter(s) and estimated values. Routine and non-routine adjustments as required.
Option B Retrofit Isolation: All Parameter Measurement	Savings are determined by field measurement of the energy use of the EEM-affected system. Measurement frequency ranges from short-term to continuous, depending on the expected variations in the savings and the length of the reporting period.	Short-term or Continuous measurements of baseline and reporting period energy, and/or engineering computations using measurements of proxies of energy use. Routine and non-routine adjustments as required.
Option C Whole Facility	Savings are determined by measuring energy use at the whole facility or sub-facility level. Continuous measurements of the entire facility’s energy use are taken throughout the reporting period.	Analysis of whole facility baseline and reporting period (utility) meter data. Routine adjustments as required, using techniques such as simple comparison or regression analysis. Non-routine adjustments as required.
Option D Calibrated Simulation	Savings are determined through simulation of the energy use of the whole facility, or of a sub-facility. Simulation routines are demonstrated to adequately model actual energy performance measured in the facility. This Option usually requires considerable skill in calibrated simulation.	Energy use simulation, calibrated with hourly or monthly utility billing data. (Energy end use metering may be used to help refine input data.)

Selected Measurement and Verification Options

The below table illustrates the selected IPMVP Options for the EEMs covered under this M&V plan:

Site	Lighting Upgrades	HVAC Upgrades	Controls Upgrades	Electrical Upgrades	Building Envelope Upgrades	Renewable Energy
Aquatic Center	A, C		A, C			
City Hall	A, C	A, C	A, C		A, C	A, C
Corporate Yard	A, C	A, C	A, C			
Fire Station #1	A, C	A, C	A, C		A, C	A, C
Fire Station #2	A, C	A, C	A, C			A, C
Old Corporate Yard	A, C					A, C
Senior Center	A, C		A, C			
WWTP South	A, C			A, C		A, C
Well 8						A, C
Well 9						A, C
Well 11						A, C

The particular options selected for each EEM was based on a number of related issues including: EEM complexity, EEM cost, EEM savings, cost of M&V and the ability to accurately determine holistic building operations. If more than one option is selected, either option will be considered valid by ABS and the Purchaser. The baseline and the post-installation energy use depend on various system and external factors, such as utilized setpoints, energy demand, operating hours, occupancy, weather conditions, and energy rates. Development of the baseline, post installation consumption, cost avoidances and simple payback for each EEM covered by this M&V plan includes:

- Stipulated Values – These agreed upon values are important in the overall calculations for energy consumption, financial calculations, and operating conditions.
- Developed/Measured Values – These are the values determined by spot or short-term measurement. Values are determined based on a sound engineering approach to variable determination. Both values used for baseline consumption and values to be measured/determined as parts of the post installation are detailed.
- Assumptions – Some values that are assumed in order to calculate energy use are necessary in certain circumstances.
- Calculations – The necessary calculations for baseline energy usage, costing, and annual savings for evaluating the estimated and actual savings of EEMs.
- Pre-Retrofit Measurements – EEMs may have a section detailing the measurements required prior to the retrofit. These measurements are used to establish the baseline or adjustments required to establish an accurate baseline.
- Post Retrofit Measurements – EEMs may have a section that details the measurements required if any after the retrofit is completed. This section is utilized to detail the type of measurements required for verification of the energy savings calculations.
- Adjustments – EEMs may have a section for adjustments. This section includes possible adjustments to the actual Energy Audit Report and energy information, appropriate adjustments to the M&V plan, and adjustments to any savings guarantee. This section is utilized to anticipate changes necessary due to field conditions and provide an appropriate response in the verification of actual energy and cost avoidances.
- Commissioning – EEMs may have a section regarding the commissioning process. This provides the detail for how the savings will be verified upon project completion, and the type of inspection that will be completed, and the billing method for verified savings. This section is utilized to provide a standard approach for each EEM upon project completion.
- ABS will follow the agreed-upon M&V protocols for the measurement period and will prepare post installation reports with supporting documentation for the Purchaser.

Measurement and Verification Plan

IPMVP Option A: Retrofit Isolation, Key Parameter Measurement For Lighting System Upgrades

M&V Procedure

This option provides for the measurement of at least one variable pre and post retrofit with other variables allowed for stipulation. For this retrofit, a representative sample of each of the fixture types will be measured. The same sample will be used for both pre and post retrofit calculations. Wattage shall be measured with an appropriate instrument that is properly calibrated.

Stipulated Values

Operating Hours are stipulated for purposes of M&V. Please refer to the Lighting Systems Attachment in the Installation Agreement for a complete list of lighting hours of operation. Stipulated values are agreed to by the Purchaser.

Adjustments

For this EEM, the following adjustments are allowed for purposes of Measurement and Verification:

- Light level requirements may be modified as detailed in this plan.
- Changes in actual construction including the number and/or type of lighting fixtures.
- Utility rates, billing days or degree days.

Savings Calculations

The calculations for the baseline energy consumption and post retrofit savings shall be completed in accordance with the industry guidelines set forth by IPMVP and methods indicated below.

$$kWh\ Savings = [(Existing\ Watts / Fixture) \times (Existing\ Quantity) \times (Existing\ Hours\ of\ Operation) / 1000] - [(Proposed\ Watts / Fixture) \times (Proposed\ Quantity) \times (Proposed\ Hours\ of\ Operation) / 1000]$$

$$Dollar\ Savings = (kWh\ Savings) \times (Average\ Utility\ Baseline\ \$/kWh\ Rate)$$

Operational Savings

The Purchaser will realize maintenance and operational savings resulting from the new system installations, extended warranties, and/or service agreements provided by ABS. The operational savings are stipulated and met upon the completed installation of the energy retrofit contract.

Commissioning

Commissioning shall consist of inspections and a final verification report. Inspections shall consist of:

- During construction, ABS shall maintain a detailed record of the types and quantities of fixtures retrofitted and fixtures installed in each facility. A post construction inspection is required by the responsible M&V party.
- After lighting modifications have been completed, the installations shall be inspected to verify counts by fixture code.
- Post-retrofit lighting levels shall be measured to verify compliance with the contract standards.

Measurement and Verification Plan

IPMVP Option A: Retrofit Isolation, Key Parameter Measurement For Mechanical System Upgrades

M&V Procedure

This option shall provide for the measurement of at least one variable pre and post-retrofit with other variables allowed for stipulation. For this retrofit, field data shall be collected which includes, unit counts, unit capacity, nameplate electrical data and efficiency rating for each existing HVAC system.

Stipulated Values

Hours of operation, heating/cooling loads and runtime hours of the existing HVAC systems are stipulated for purposes of M&V. Please refer to The Mechanical Systems and Controls Systems Attachment(s) in the Installation Agreement for specific operating hours and runtime hours for each HVAC unit or area. Stipulated values are agreed to by Purchaser.

Adjustments

None required for this EEM.

Savings Calculations

The calculations for the baseline energy consumption and post retrofit savings shall be completed in accordance with the industry guidelines set forth by IPMVP and methods indicated below.

$$kWh\ Savings = [(Capacity\ of\ Existing\ HVAC\ Unit) \times (Existing\ Unit\ Efficiency) \times (Stipulated\ Load\ Factor)] - [(Capacity\ of\ New\ HVAC\ Unit) \times (New\ Unit\ Efficiency) \times (Stipulated\ Load\ Factor)] \times (Annual\ Hours\ of\ Operation)$$

$$Dollar\ Savings = (kWh\ Savings) \times (Average\ Utility\ Baseline\ \$/kWh\ Rate)$$

Operational Savings

The Purchaser will realize maintenance and operational savings resulting from the new system installations, extended warranties, and/or service agreements provided by ABS. The operational savings are stipulated and met upon the completed installation of the energy retrofit contract.

Commissioning

Commissioning shall consist of inspections and a final verification report. Inspections shall consist of:

- ABS shall include verification that each new unit is operating as specified in all modes (heat/cool).

Measurement and Verification Plan

IPMVP Option A: Retrofit Isolation, Key Parameter Measurement For Control System Upgrades

M&V Procedure

This option shall provide for the measurement of at least one variable pre and post-retrofit with other variables allowed for stipulation. The cooling and heating setpoints during occupied and unoccupied modes of the HVAC equipment will be verified and documented. For this retrofit, field data shall be collected which includes, unit counts, unit capacity, nameplate electrical data, efficiency rating, operating schedules, cooling and heating temperature setpoints for each HVAC system.

Stipulated Values

Hours of operation, heating/cooling loads and runtime hours of the existing HVAC systems are stipulated for purposes of M&V. Please refer to The Mechanical Systems and Controls Systems Attachment(s) in the Installation Agreement for specific operating hours and temperature setpoints. Stipulated values are agreed to by Purchaser.

Adjustments

For this EEM, the following adjustments are allowed for the purposes of Measurement and Verification:

- Addition or subtraction to the conditioned square footage of facilities.
- Utility rates, billing days or degree days.
- Equipment changes or modifications.
- Changes in facility usage associated with daily occupancy times, occupancy levels and special events.

Savings Calculations

The calculations for the baseline energy consumption and post retrofit savings shall be completed in accordance with the industry guidelines set forth by IPMVP and methods indicated below.

kWh Savings = (Capacity of HVAC Unit) x (Unit Efficiency) x (Stipulated Load Factor) x (Existing Annual Operating Hours – Proposed Annual Operating Hours)

Therm Savings = (Heating Capacity of HVAC Unit) x (Unit Efficiency) x (Stipulated Load Factor) x (Existing Annual Operating Hours – Proposed Annual Operating Hours)

Dollar Savings = [(kWh Savings) x (Average Utility Baseline \$/kWh Rate)] + [(Therm Savings) x (Average Utility Baseline \$/therm Rate)]

Operational Savings

The Purchaser will realize maintenance and operational savings resulting from the new system installations, extended warranties, and/or service agreements provided by ABS. The operational savings are stipulated and met upon the completed installation of the energy retrofit contract.

Pre-Retrofit Measurements

Existing operating hours and cooling/heating temperature setpoints for each HVAC unit or area will be obtained from current thermostats and/or Energy Management System.

Post-Retrofit Measurements

Post-retrofit operating schedules, cooling and heating temperature setpoints in both occupied and unoccupied modes for the HVAC equipment will be obtained using the new control systems.

Commissioning

Commissioning shall consist of inspections and a final verification report. Inspections shall consist of:

- ABS shall include verification that the operating schedules, cooling and heating setpoints and controls sequences for the HVAC equipment connected to the new thermostats and/or energy management system are programmed as specified.

City of Patterson HVAC Controls Operating Parameters								
Location	Equipment	M-F Start	M-F Stop	Wk End Start	Wk End Stop	Wk/Yr	Heating Set-Pt	Cooling Set-Pt
Corporate Yard	HVAC	5:00	17:00	N/A	N/A	52	68	74
City Hall	HVAC	6:00	18:00	6:00	18:00	52	68	74
Fire Station #1	HVAC	0:00	0:00	0:00	0:00	40	68	74
Fire Station #2	HVAC	0:00	0:00	0:00	0:00	52	68	74
Hammon Senior Center	HVAC	8:00	18:00	N/A	N/A	51	68	74
Aquatic Center	HVAC	8:00	20:00	8:00	16:00	51	68	74

Measurement and Verification Plan

*IPMVP Option A: Retrofit Isolation, Key Parameter Measurement
For Transformer Upgrades*

M&V Procedure

This option provides for the measurement of at least one variable pre and post retrofit with other variables allowed for stipulation. For this retrofit, a representative sample of each of the transformer types will be measured. The same sample will be used for both pre and post retrofit calculations. Wattage shall be measured with an appropriate instrument that is properly calibrated.

Stipulated Values

Operating Hours are stipulated for purposes of M&V. The hours of operation will match the hours the facilities were operating during the baseline period. The transformers are energized 24/7 year-round for all facilities. Stipulated values are agreed to by the Purchaser. The below table illustrates stipulated existing and proposed transformer losses and percentage loading based on extensive field measurements:

Transformer	Existing Equipment		Proposed Equipment				Savings
	No Load Losses (W)	Full Load Losses (W)	No Load Losses (W)	Full Load Losses (W)	ON % Loading	Off % Loading	kWh Savings
50	567	2393	79	690	9.00%	5.00%	4,395

Adjustments

For this EEM, the following adjustments are allowed for purposes of Measurement and Verification:

- Utility rates, billing days or degree days.

Savings Calculations

The calculations for the baseline energy consumption and post retrofit savings shall be completed in accordance with the industry guidelines set forth by IPMVP and methods indicated below.

$$kWh\ Saving = EXISTING \left[\frac{(No\ Load\ Losses + (On\ \% \ Loading)^2 * (Full\ Load\ Losses - No\ Load\ Losses))}{1000} \right] * (Operation\ Hours) + \frac{(No\ Load\ Losses + (OFF\ \% \ Loading)^2 * (Full\ Load\ Losses - No\ Load\ Losses))}{1000} * (Operation\ Hours) - PROPOSED \left[\frac{(No\ Load\ Losses + (On\ \% \ Loading)^2 * (Full\ Load\ Losses - No\ Load\ Losses))}{1000} \right] * (Operation\ Hours) + \frac{(No\ Load\ Losses + (OFF\ \% \ Loading)^2 * (Full\ Load\ Losses - No\ Load\ Losses))}{1000} * (Operation\ Hours)$$

$$Dollar\ Savings = (kWh\ Savings) \times (Average\ Utility\ Baseline\ \$/kWh\ Rate)$$

Operational Savings

The Purchaser will realize maintenance and operational savings resulting from the new system installations, extended warranties, and/or service agreements provided by ABS. The operational savings are stipulated and met upon the completed installation of the energy retrofit contract.

Commissioning

Commissioning shall consist of inspections and a final verification report. Inspections shall consist of:

- During construction, ABS shall maintain a detailed record of the types and quantities of fixtures retrofitted and fixtures installed in each facility. A post construction inspection is required by the responsible M&V party.

Measurement and Verification Plan

IPMVP Option A: Retrofit Isolation, Key Parameter Measurement For Solar Photovoltaic System

M&V Procedure

This option shall provide for the measurement of at least one variable pre- and post-retrofit with other variables allowed for stipulation. For this installation, the kilowatt-hour (kWh) production from the solar PV systems shall be measured and recorded.

Stipulated Values

The solar system savings are stipulated for the purposes of M&V. Values are obtained from the expected solar kWh production outlined in the Solar Systems Attachment and assuming a NEM 3.0 tariff with the utility. The solar panel degradation factor (0.8%/year), avoided energy cost (\$/kWh, based on the City's rate schedule) and utility escalation rate (4%/year) are stipulated for the solar photovoltaic systems. Stipulated values are agreed to by Purchaser.

Savings Calculations

The calculations for the baseline energy consumption and post installation savings provided the basis for the overall financial viability of these EEMs. The following equations summarize the calculation of savings:

Electricity Production: Electricity production of the PV system is determined by recording the kilowatt hours (kWh) off the net electric meter and recording the results.

Dollar Savings: After recording kWh production, each site's avoided energy cost (\$/kWh), as shown in Utility Baseline, shall be used to determine dollar savings. Dollar Savings = (Annual kWh production) x (Avoided \$/kWh) = Annual \$ kWh Saved

Maintenance of System

Calculation of energy cost savings from the solar PV systems are contingent upon the Purchaser maintaining an active operations and maintenance (O&M) contract with a solar service provider for the term of the solar lease agreement. The City shall provide ABS access to monitoring to the existing solar systems.

Pre-Retrofit Measurements

Existing utility electrical energy (kWh) consumption as shown in the Utility Baseline Summary, as shown in Attachment 2.

Post-Retrofit Measurements

Electrical energy (kWh) produced from the solar PV systems recorded from the net electrical meter.

Adjustments

For this EEM, the following adjustments are allowed for the purposes of Measurement and Verification:

- Addition or subtraction to the square footage of facilities.
- Utility rates, billing days or degree days.
- Addition or subtraction of electrical load at the facilities.
- Changes in the solar PV system sizing, location and layout.
- Changes in the conditions at or near any of the sites, which causes additional shading, soiling, or otherwise reduced performance of the solar PV systems.
- Adjustment to the Guaranteed Production values for weather shall use local weather data as recorded during the corresponding period.
- To the extent that the System output is negatively impacted by casualty, government regulation and or restriction that is beyond the Contractor's control to remedy within a reasonable time period, the Parties shall negotiate in good faith a modification of the Guaranteed Production.

Excused Production Losses

For this EEM, the following events are excused from production losses and any necessary adjustments are allowed for the purposes of Measurement and Verification:

- Force Majeure Events: Lost production from the beginning of a Force Majeure Event until production limiting factors caused by the Force Majeure Event have been remedied.

- Grid Event: Lost production when a fluctuation in the Grid frequency or voltage causes the inverters or the System to disconnect from the Grid. The “Grid” is defined to be the system receiving power exported from the System.
- Grid Outage: Lost production when a failure in the grid or Interconnection Infrastructure prevented energy from being exported from the solar facility. “Interconnection Infrastructure” means that utility-owned and maintained interconnection equipment (the substation including but not limited to transformers, switches, and protective relays) that is used to connect the Facility to the utility grid. Grid operator/owner ordered curtailments for any reason, other than an issue in the System, is a Grid Outage.
- Weather Events: Lost production from weather that limits or prevents safe operation of the solar facility including floods, snow, hurricanes, tornadoes, insolation-limiting wildfires, and volcanic activity.
- Purchaser Caused: Lost production when System dc capacity is off-line due to outages attributable to Purchaser’s decision to perform or cause to be performed, any investigations, studies, operations, construction, installation and maintenance work or other activities deemed appropriate by ABS at its sole discretion.

Commissioning

Commissioning shall consist of inspections and a final Commissioning report. Commissioning of the new solar PV system shall include securing the Utility Interconnect agreement, proper alignment of the solar panels and functional testing.

Measurement and Verification Plan

IPMVP Option C: Whole Facility

M&V Procedure

The Measurement and Verification (M&V) Plan following IPMVP Option C protocol is designed to evaluate the energy performance of the whole facility, not just individual EEMs. The energy performance is assessed through utility meters, whole-facility meters, or sub-meters. The measurement boundary encompasses either the whole facility or a major section of the facility where EEMs were installed. Option C determines the combined savings of all the EEMs installed at the facility and is monitored by the associated energy meter. Savings reported under this Option will include the positive or negative effects of any non-EEM changes made in the facility because whole-facility meters are used.

Adjustments

Adjustments will be computed from identifiable physical facts about the energy governing characteristics of equipment within the measurement boundary. Adjustments are used to express both pieces of measured energy data under the same set of conditions. Two types of adjustments are possible:

- *Routine Adjustments* are used to account for any energy-governing factors, expected to change routinely during the reporting period. Routine Adjustments are completed by developing a mathematical model of each meter's energy-use pattern. Typically, the baseline model includes factors derived from regression analysis, which correlates energy to one or more independent variables such as occupancy, weather, and metering period length. Values of independent variables over the reporting period can be inputted into the baseline model to predict what the baseline energy consumption would have been had if no EEM's were installed.
- *Non-Routine Adjustments* are used to account for those energy-governing factors which are not usually expected to change, such as: the facility size, the design and operation of installed equipment, or the type of occupants. ABS will monitor these static factors for change throughout the reporting period. Adjustments will be based on industry standards and sound engineering principles as they pertain to the specific affected system.

Metering

Whole-facility energy measurements can use the utility's meters. Utility meter data is considered 100% accurate for determining savings because this data defines the payment for energy. The energy supplier's meter(s) may be equipped or modified to provide output that can be recorded by the facility's monitoring equipment. Meter data can be hourly, daily or monthly whole-facility data.

Savings Calculations

The calculations for the baseline energy consumption and post retrofit savings shall be completed in accordance with the industry guidelines set forth by IPMVP and ASHRAE. The baseline period and reporting period should use complete years of continuous data (12, 24, or 36 months). The electrical consumption reduction of the facility (measured in kWh and/or kW) shall be reported as Savings, or Avoided Energy Use, in which the savings are stated under the conditions of the reporting period and determined by the following equation:

$$\text{Energy Savings (Avoided Energy Use)} = (\text{Baseline Energy} \pm \text{Routine Adjustments to reporting-period conditions} \\ \pm \text{Non-Routine Adjustments to reporting-period conditions}) - \text{Reporting-Period Energy}$$

The price schedule of the reporting period will be used to compute the "avoided cost" on a meter by meter basis. The price schedule will be obtained from the utility and will include all elements that are affected by metered amounts, such as consumption charges, demand charges, power factor, and demand ratchets. In the event of a significant decrease in energy prices, the price schedule used for savings reporting will be that which prevailed at the time of commitment to the investment. Cost savings are determined by applying the appropriate rate / price schedule in the following equation:

$$\text{Cost Savings (Avoided Cost)} = \text{Cost of Baseline Energy} - \text{Cost of Reporting-Period Energy}$$

Attachment 2

Utility Baseline Summary

Site Name	Site Address	Building Area (sqft)	Annual Use (kWh)	Annual Cost (\$)	Blended Rate (\$/kWh)
Aquatic Center	1025 W Las Palmas Ave	5,385	87,416	\$9,272	\$0.106
City Hall	1 Plaza Circle	17,000	268,320	\$31,695	\$0.118
Corporate Yard	16215 Baldwin Rd	20,750	48,401	\$5,251	\$0.108
Fire Station #1	344 W Las Palmas Ave	8,605	68,240	\$7,851	\$0.115
Fire Station #2	1950 Keystone Pacific Pkwy	10,832	92,680	\$9,733	\$0.105
Old Corporate Yard	420 S 4th St	7,930	22,944	\$2,984	\$0.130
Senior Center	1033 W Las Palmas Ave	8,465	88,071	\$13,164	\$0.149
WWTP South	14901 Poplar Ave	7,250	1,367,501	\$164,969	\$0.121
Well 8	Orange Ave		308,689	\$39,504	\$0.128
Well 9	636 Orange		605,200	\$65,292	\$0.108
Well 11	15804 Sycamore		473,284	\$57,566	\$0.122

Attachment 3

Energy Efficiency and Renewable Energy Project Cashflow