

CONTRACT AMENDMENT: 2015-03-001

Agreement number 2015-03 between Monitoring Analytics, LLC (“MA”) and Western Climate Initiative, Inc. (“WCI, Inc.”), which was executed by the parties on October 9, 2015, is hereby further amended as follows:

SUMMARY OF CHANGES

Amendment Number	001
Effective Date for Amendment:	January 1, 2020
Current Agreement Amount:	██████████ (USD)
Changes to the Agreement Amount:	Net increase of ██████████ (USD)
Amended Maximum Agreement	██████████ (USD)
Current Agreement Term:	Beginning on October 9, 2015 and ending on December 31, 2019. (48 months extension with one (1) two (2) year mutually agreeable option to extend contract through December 31, 2022)
Extension of Tasks:	Market monitoring support

PURPOSE OF THIS AMENDMENT

- 1) Extend the contract so MA can provide continued cap-and-trade market monitoring support to the jurisdictions through 2020 and 2021.

SPECIFIC TERMS AND CONDITIONS WHICH CONSTITUTE THE AMENDMENT

- 1) The agreement referenced above is modified as follows:
 - a. Maximum amount of agreement: Line 3 of the Standard Agreement cover page is changed to “██████████”.
 - b. Attachment B, page B-2 is modified as follows: “Not-to-Exceed T&M budget for this Agreement is ██████████”.

EXPLANATION OF CHANGES

- 1) MA will continue to provide cap-and-trade market monitoring services during 2020 and 2021 as requested by the Participating Jurisdictions including, but not limited to:
 - Maintaining work plans and schedules;
 - Maintaining security and monitoring plans;
 - Monitoring compliance instrument holdings; transfer activities; secondary, derivative, and related market activity; and market structure;

- Providing independent review of participant corporate structure;
 - Auditing and monitoring auction and reserve sales;
 - Participating in auction services testing;
 - Reviewing Participating Jurisdiction regulations and other programs;
 - Linking with additional jurisdictions;
 - Providing knowledge transfer and ad hoc reports; and
 - Optional transition out tasks as requested.
- 2) The amount of support work requested by Participating Jurisdictions of Contractor under the Agreement and as provided for in this Amendment will be dependent on the needs of the Participating Jurisdictions as determined in their sole discretion.

APPROVALS

This document and any attachments described herein constitute an amendment to the above numbered agreement. All provisions of that contract, except those which are explicitly changed by this amendment, shall remain in full force and effect. By signing, the Contractor and WCI, Inc. do hereby accept and approve this amendment.

Monitoring Analytics, LLC

Signature on file <hr/> Authorized Signature Joseph Bowring <hr/> Name	10/21/2019 <hr/> Date President <hr/> Title
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Western Climate Initiative, Inc.

Signature on file <hr/> Authorized Signature Greg Tamblyn <hr/> Name	11/6/2019 <hr/> Date Executive Director <hr/> Title
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Justification for a Contract Amendment to Contract 2015-03: Cap-and-Trade Market Monitoring Services

November 7, 2019

Introduction

Most of the administrative support provided by WCI, Inc. is highly specialized and has been developed through the use of contractors. In October 2015, the WCI, Inc. Board of Directors approved the agreement with Monitoring Analytics, LLC to enable multi-jurisdictional monitoring among Participating Jurisdictions of auctions and markets in greenhouse gas compliance instruments and relative derivatives. The Participating Jurisdictions currently include the Provinces of Quebec and Nova Scotia and the state of California. The current agreement includes one (1) two (2) year option that can be executed by mutual agreement of WCI, Inc. and MA.

WCI, Inc. proposes to exercise the option and amend the current agreement to extend the agreement through December 31, 2021 and provide additional funding necessary to continue to enable multi-jurisdiction monitoring.

Description of Services

The extension of the agreement will continue the work currently provided by MA including, but not limited to:

- Maintaining work plans and schedules;
- Maintaining security and monitoring plans;
- Monitoring compliance instrument holdings; transfer activities; secondary, derivative, and related market activity; and market structure;
- Providing independent review of participant corporate structure;
- Auditing and monitoring auction and reserve sales;
- Participating in auction services testing;
- Reviewing Participating Jurisdiction regulations and other programs;
- Linking with additional jurisdictions;
- Providing knowledge transfer and ad hoc reports; and
- Optional transition out tasks as requested.

Procurement Approach

The competitive procurement process that resulted in the initial selection of MA to provide cap-and-trade market monitoring services has been described previously and approved by the WCI, Inc. Board of Directors.

MA has demonstrated its qualifications to provide the services described above through its performance under the existing WCI, Inc. contract. This contract includes market monitoring support needed by all Participating Jurisdictions.

A contract modification is being proposed as the procurement vehicle to retain these required services.

WCI, Inc. staff approached MA to confirm their interest in and availability to continue this work. The contract amendment with MA was developed by WCI, Inc. staff based on technical requirements provided by the Participating Jurisdictions.

No additional steps have been taken to tender ongoing market monitoring services.

Justification for a Non-Competitive Procurement

WCI, Inc.'s Procurement Policy provides for non-competitive procurement in certain instances. In this case, the non-competitive procurement is justified based on the following two allowable exemptions:

- Contract amendments to extend the original term for services and to add additional funding.



Monitoring Analytics, LLC

Proposal for Cap and Trade Market Monitoring Services

Presented to the Western Climate
Initiative, Inc. in Response to WCI RFP
#2015-03

August 26, 2015



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Proposal Letter

August 26, 2015

WCI, Inc.
980 Ninth Street
Suite 1600
Sacramento, CA 95814

Dear Western Climate Initiative:

Monitoring Analytics, LLC is pleased to submit this proposal for “Cap and Trade Market Monitoring Services” to the Western Climate Initiative, Inc. in response to WCI RFP #2015-03.

This proposal documents our qualifications as a market monitor, including our record of independence and integrity, our key proposed personnel and qualifications, our experience applicable to the scope of work, and our proposed work plan and cost.

The enclosed proposal is submitted in response to the above-referenced Request for Proposal #2015-03, including any addenda. Through submission of this proposal we agree to all of the terms and conditions of the Request for Proposal, and agree that any inconsistent provisions in our proposal may result in a lower score, up to and including disqualification. We have carefully read and examined the Request for Proposal, and have conducted such other investigations as were prudent and reasonable in preparing the proposal. We agree to be bound by statements and representations made in our proposal.

This proposal includes no exceptions to the WCI, Inc. General Terms and Conditions.

The offer contained in this proposal constitutes an irrevocable offer for a period of 180 days after proposal submission.

We sincerely appreciate the opportunity to be of service to the Western Climate Initiative, Inc., and we look forward to continuing to provide our market monitoring services. Should you have any questions please contact me directly at 610-271-8051, or by email at Joseph.Bowring@MonitoringAnalytics.com.

Sincerely, Joseph

Bowring

President
Monitoring Analytics, LLC
2621 Van Buren Avenue, Suite 160
Eagleville, Pennsylvania 19403
United States of America

Proposal Summary

Monitoring Analytics proposes to provide market monitoring services to the Western Climate Initiative, Inc. (WCI) in response to Request for Proposal RFP 2015-03. Monitoring Analytics currently serves as the Market Monitor for the WCI (the California Air Resources Board (ARB) since 2012, and the Québec Ministry of Développement Durable Environnement et Lutte Contre les Changements Climatiques (MDDELCC) since 2013.)

As the incumbent Market Monitor for WCI, Inc., Monitoring Analytics has supported and contributed to the development of the ARB and MDDELCC cap-and-trade programs, and has detailed knowledge of the complex regulations and processes that have made the WCI program a success to date.

With the potential that WCI will contract with a new auction administrator, and that new jurisdictions may join, WCI and its jurisdictions will benefit from the continuity provided by maintaining a trusted market monitor. Monitoring Analytics has worked with the WCI, ARB and MDDELCC to develop WCI's complex market and monitoring program, and can continue to build on this foundation of expertise and experience.

The total proposed not-to-exceed cost for the Cap and Trade Market Monitoring Service for the duration of December 1, 2015, through January 31, 2020 is [REDACTED]0. The proposed not-to-exceed cost to extend the contract an additional two years, through January 31, 2022, is [REDACTED].

Jointly, with the WCI administration, and the ARB and MDDELCC staff, we have developed a mature market monitoring program, for which we expect to bill less than [REDACTED] in 2015. We expect that the steady-state monitoring program will continue to operate efficiently and cost effectively in future years. The not-to-exceed total included in this proposal also provides the required flexibility to accommodate the increased work load that would result from changes in program scope anticipated in the RFP, including the addition of new jurisdictions and the potential engagement of a new auction administrator. Under the current contract, this flexibility has allowed WCI jurisdictions to include Monitoring Analytics in ad-hoc investigations and analyses that add value to the cap-and-trade program.

Technical Proposal

A. Technical Approach and Understanding

Monitoring Analytics presents a Technical Approach, responsive to the elements specified in the RFP:

Demonstrated sound, feasible, and achievable technical approach to accomplishing the project, which clearly describes the project's objectives and needs and the manner in which they shall be addressed, not merely repeating the Statement of Work;

Monitoring Analytics proposes to continue to provide market monitoring services to WCI consistent with the current level of service being provided. Monitoring Analytics proposes to use the following approach to monitoring the WCI CO₂ allowance auctions, subject to agreement with the WCI and its participating jurisdictions.¹ Monitoring Analytics has the demonstrated experience and the technical infrastructure to implement all of the following recommendations in the market monitoring service we are proposing for the WCI. This summary specifies the role of the monitor as Monitoring Analytics proposes to implement it.

Market Monitoring

Role of market monitoring

The monitor will be responsible for monitoring, and reporting on, compliance with the rules, standards, procedures, and practices of the direct markets and secondary markets. The monitor will observe and comment on actual and potential design flaws in market rules, standards, and procedures, and identify structural problems in the markets that may inhibit robust and competitive markets. The monitor will screen for the potential of market participants to exercise market power or manipulate the market, the behavior of market participants that is consistent with attempts to exercise market power or manipulate the market and the market performance that results from the interaction of market structure with participant behavior.

¹This approach to monitoring was contributed by Monitoring Analytics to the Western Climate Initiative in a published comment about the WCI's Market Oversight White Paper in December 2009.

When significant problems arise in the markets, the monitor has the responsibility to notify the appropriate oversight entities to prompt further investigation, regulatory action, or modification of market rules.

The monitor is responsible for reviewing available data, designing market metrics based on the available data and proposing the collection and creation of new data items as necessary.

In examining markets, Monitoring Analytics analyzes market structure, the behavior of market participants in that market structure and the resultant performance of markets. The monitor will develop and employ metrics and analytical tools applicable to market structure, participant behavior and market performance. Where established metrics and thresholds do not exist or do not apply, the monitor has the expertise to develop new metrics based in the actual operations of markets.

Data Handling Requirements for Market Monitoring

The monitor has experience handling, processing, storing and securing the data and creating the metrics required to carry out its function.

Conflicts of Interest

The monitor should have no real or perceived conflicts of interest with any of the participants in the markets it is monitoring. The monitor of a market should not act on behalf of any party directly involved in the market. The monitor's staff should not have financial interests in any company participating in the markets monitored by the monitor. The absence of any conflict of interest is essential to assuring the impartiality of the market monitor and contributing to the confidence of market participants and the public in the market.

Monitoring the Primary Market

The monitor will independently verify the outcomes of the auctions. The monitor will evaluate price formation in the auctions, including examining the auctions for accurate price discovery or any impediments to accurate price discovery.

Benchmarks for monitoring the primary market: Price formation

The monitor will develop and employ metrics and screens for accurate price discovery, or any impediments to accurate price discovery. This includes an evaluation of the basic auction mechanics and operation. This also includes, but is not limited to, comparisons of the auction outcomes and underlying bids relative to estimated and/or market based incremental cost of CO₂ credit allowances and/or credit alternatives.

Benchmarks for monitoring the primary market: Market Structure

The monitor will examine the structure of the market. This entails examining the patterns of ownership of existing CO₂ allowances and net positions (allowance holdings relative to accrued compliance obligations) among the authorized entities (e.g., an organization and its authorized participant and/or agents) participating in the current auction, to the extent that such data is available. The monitor will examine the potential and actual patterns of ownership of CO₂ allowances and net positions that result from the auctions.

Benchmarks for monitoring the primary market: Behavior

The monitor will examine the behavior of the participants in the market. The monitor will examine the demand bids (price and quantity pairs) by authorized entities, by groups of entities and by individual participants. The monitor will examine demand bids and net allowance positions for activity consistent with attempts to manipulate auction results.

Monitoring the Secondary Markets

In order to effectively monitor the auctions, the monitor will actively screen and report on activity in the secondary market for allowances. The monitor will track and examine trades of allowances between account holders and the timing of the trades within the CO₂ emission allowance tracking system. The monitor will track allowance transactions by entities, sets of entities and individual participants before, during and after auctions to monitor for potential secondary market transactions which may interfere with accurate price discovery within the auction.

Benchmarks for Monitoring Secondary Markets

The monitor will examine secondary market transactions by entities, sets of entities and individual participants to evaluate price formation and price discovery in the secondary markets, and the interaction between the auction and the secondary markets in terms of price formation and price discovery. The monitor will screen for activity and/or performance consistent with attempts to manipulate prices and, depending on data availability, attempts to leverage secondary and associated market (energy markets, CO₂ offset markets or interests) positions.

The Market Monitoring Function: Reporting

Reporting market findings and the basis of those findings is one of the primary roles of market monitoring. To the extent that some aspects of market activity are kept confidential to preserve the efficiency of the market, it is important that the monitor provide the results of its oversight of primary and secondary markets in

the form of comprehensive reports on the metrics it is using to screen the market structure, participant behavior and market performance. The monitor has a responsibility to explain market outcomes. The monitor will provide the result of its review of the operation of each auction and identify any potential design flaws in operating rules, standards, procedures, market power mitigation or practices as set forth in the auction rules which may negatively impact the outcome of the auctions. The monitor will confirm the outcome of the auctions and provide a review of the structure of the auctions, behavior of the participants in each auction and performance of each auction. The monitor will identify any issues with the structure of the auctions, the behavior of the auction participants or the performance of the auctions and provide a review of auction price formation and price discovery. The monitor will identify and report on any concerns regarding the potential ability or probable attempts to leverage secondary and associated market positions over the previous year.

Demonstrated solid grasp of the subject area, including familiarity with regulatory and market-based issues related to Market Monitoring Services for market-based environmental compliance programs;

Monitoring Analytics solid grasp of the subject area is demonstrated by our experience serving as the market monitor for the WCI cap-and-trade program since 2012 and the deliverables that have been provided to WCI and the jurisdictions, including:

- Auction Reports (16)
- Quarterly Reports (11)
- Annual Reports (4)
- FAQ Proposed Questions and Answers
- MAP Auction User Guide Edits and Comments
- MAP Prototype Review
- Review of Ownership Data
- Review of Auction and Reserve Sale Procedures
- Review of Market Cap and Trade Design and Technical Requirements
- Review of QC C&T Regulation
- Auction Requirements Review
- Review of Proposed Algorithm and Report Changes
- Reserve Sale Reports Design Review
- Review of Auction Reports Designs
- Review of QC C&T Regulation Proposed Changes
- Algorithm test cases for individual auction
- Algorithm test cases for linked auction
- MA memo on AA Test Case Results
- MA memo on WCI UAT Results
- MA memo on Exchange Rate Recommendation in Linked Auction

- MA memo on Bid Report Issue
- MA memo on Auction Summary Report Statistics Issues
- MA memo on Median Metrics
- MA memo on application of bid guarantee
- MA memo on At Risk Entity Review
- MA memo on Minimizing and resolving rounding error issues in linked auction
- MA memo on Post auction allowance allocation methodology suggestions
- Review of Regulation Updates
- User Acceptance Test Issues

Discussion of any technical barriers/anticipated major difficulties, and recommendations for their resolution; and

There are no anticipated technical barriers or major difficulties associated with this proposal.

Demonstrated ability to work with organizations responsible for designing and implementing market-based environmental compliance mechanisms.

Monitoring Analytics only business is market monitoring and market design, and our experience with WCI, ARB, MDDELCC, PJM and other ISOs/RTOs demonstrates our grasp of the issues involved and our ability to work with these organizations. Monitoring Analytics, working closely with WCI, ARB and MDDELCC, has contributed to the development of the ARB and MDDELCC cap-and-trade programs. Further details of this demonstrated ability are included throughout this proposal.

Conflicts of Interest and Confidentiality

Monitoring Analytics takes pride in our independence from conflicts of interest. Monitoring Analytics is an independent consulting firm that serves as the Independent Market Monitoring Unit for PJM Interconnection. In our role as the PJM Market Monitor, Monitoring Analytics monitors the market in accordance with our governing tariff and does not act on behalf of any party within the PJM footprint.² Monitoring

² See PJM Open-Access Transmission Tariff Attachment (OATT) M §§ I & III.C (“The Market Monitoring Unit shall be independent from, and not subject to, the direction or supervision of any person or entity, with the exception of the PJM Board as specified in Section III.D, and the Commission. No person or entity shall have the right to preview, screen, alter, delete, or otherwise exercise editorial control over or delay Market Monitoring Unit actions or investigations or the findings, conclusions, and recommendations developed by the Market Monitoring Unit that fall within the scope of market monitoring responsibilities contained in this Plan.”).

Analytics staff cannot have financial interests in any company in the markets monitored by Monitoring Analytics and cannot receive or provide gifts to any market participant.³

³ See OATT Attachment M § IX:

A. Conflicts of Interest:

1. The Market Monitoring Unit will use its best efforts to assure that all of its employees comply with this Code of Ethics and shall take appropriate disciplinary actions against employees who violate the policy.
2. The Market Monitoring Unit and its employees assisting on market monitoring matters for PJM, and their spouses and dependent children, may not have a direct equity or other financial interest in a Market Participant or in a parent, subsidiary, or affiliate of a Market Participant. (The term "direct" is meant to exclude investments such as mutual funds in which a person has no direct control, with the exception of sector-specific mutual funds.)
3. The Market Monitoring Unit and its employees assisting on market monitoring matters for PJM, may not undertake a matter for a third party where such representation would require disclosure of market-sensitive or proprietary information of PJM.

B. Prohibited Engagements and Conduct by the Market Monitoring Unit:

1. Neither the Market Monitoring Unit nor its employees will be engaged to provide advice to, or undertake a matter for or on behalf of, any entity on any entity's participation in the PJM Markets, except as otherwise authorized under subparagraphs 3 and 5 below.
2. Neither the Market Monitoring Unit nor its employees will be engaged by any entity in any litigation, open regulatory docket, alternative dispute resolution procedure, or arbitration with PJM, except as otherwise authorized under subparagraphs 3 and 5 below.
3. Neither the Market Monitoring Unit nor its employees will be engaged to appear on behalf of or against any entity before a state regulatory commission within the PJM Region in any new engagement in the electricity business except as authorized under the PJM Tariff, as requested by a state regulatory commission, or as otherwise required by law.
4. Neither the Market Monitoring Unit nor its employees shall accept any engagement by any market participant outside of the PJM Region that would require the Market Monitoring Unit to take a position adverse to any PJM member or inconsistent with any position taken by the Market Monitoring Unit in the PJM Region.
5. Neither the Market Monitoring Unit nor its employees will be engaged to appear on behalf of or against any entity before the Commission on any matter within the PJM Region

in any new engagement in the electricity business except as authorized under the PJM Tariff, as requested by the Commission, or as otherwise required by law.

6. Before the Market Monitoring Unit accepts any engagement on behalf of or against an Interested Party, it must inform the PJM General Counsel and the PJM Board of such potential engagement and provide the PJM Board with an opportunity to state its objection to such representation on the ground the engagement would present a conflict of interest or result in the material appearance of conflict. At the discretion of the Market Monitoring Unit, the Market Monitoring Unit may notify the PJM General Counsel that the proposed engagement is confidential and request that the General Counsel disclose the proposed engagement only to a PJM Board subcommittee in a manner which limits the disclosure of nonpublic information. Within seven (7) business days of being informed of the potential engagement by the Market Monitoring Unit, the PJM Board shall state any objection to such potential engagement. If the Market Monitoring Unit disagrees with the PJM Board's determination regarding the potential engagement by the Market Monitoring Unit, the Parties shall jointly engage the Commission's Dispute Resolution Service to determine whether the engagement would present a conflict of interest or result in the material appearance of a conflict. Unless the Commission's Dispute Resolution Service finds no conflict of interest the Market Monitoring Unit shall be precluded from accepting the challenged engagement. For these purposes, the term "Interested Party" means (x) a Market Participant; (v) a state regulatory commission within the PJM Region; or (z) a person or entity with a significant direct financial interest in the organization, governance or operation of PJM but shall not include PJM itself.

7. Employees of the Market Monitoring Unit shall not accept gifts, payments, favors, meals, transportation, entertainment, or services (individually, "Gift," and collectively, "Gifts"), of other than nominal value within a calendar year from PJM, Authorized Government Agencies, any market participant, contractor, supplier or vendor to the Market Monitoring Unit. Except that "Gifts" shall not include any of the foregoing that is generally provided to the attendees of business meetings (e.g. PJM stakeholder meetings). Gifts not exceeding One Hundred Fifty Dollars (\$150) shall be deemed to be of "nominal value." Similarly, neither the Market Monitoring Unit nor any employee of the Market Monitoring Unit shall offer any Gift to any public official or Market Participant unless such Gifts: are legal; not offered for specific gain or reciprocal action; follow generally accepted ethical standards; and are of nominal value.

8. Neither the Market Monitoring Unit nor its employees shall serve as an officer, employee or partner of a Market Participant.

9. Neither the Market Monitoring Unit nor its employees shall engage in any transactions in the PJM markets other than the performance of their duties under the PJM Tariff.

Monitoring Analytics continues to observe the highest possible standards for confidentiality and avoiding conflicts of interest in our ongoing work for WCI, Inc. Every Monitoring Analytics staff member involved in analysis of WCI information must first sign the confidentiality statement that is included in the contract between WCI and Monitoring Analytics. These signed statements are kept on file, and are sent to the WCI Executive Director. Monitoring Analytics will continue to take the same approach to independence and conflict disclosure for the WCI, Inc. as we have as Market Monitor for the PJM markets.

In our role as PJM Market Monitor, we perform the monitoring function in a way that handles confidential information, meeting the same data security requirements met by PJM. Monitoring Analytics, in our role as PJM Market Monitor is subject to IT security audits and hires an IT security consultant to penetration test and evaluate our security. Monitoring Analytics maintains data security while providing public market measures that permit insight into the functioning of the competitive markets and ensuring that the public interest is served.

As Market Monitor for WCI, Monitoring Analytics has developed a Security Plan which defines how we will apply our information security practices with our interactions with WCI and jurisdiction staffs, and with personnel from the auction administration and financial services contractors.

B. Corporate Experience

Corporate Experience Example 1: Western Climate Initiative (WCI)

Since 2012, Monitoring Analytics has served as the Market Monitor for the WCI cap- and-trade program. The market monitor role started with the California Air Resources Board (ARB) in 2012, and expanded to include the Québec MDDELCC in 2013. Details of our role as market monitor are included throughout this proposal.

Total contract value is approximately [REDACTED].

10. Neither the Market Monitoring Unit nor its employees shall be compensated, other than by PJM, for any expert witness testimony or commercial services, either to PJM or to any other party, in connection with legal or regulatory proceeding or commercial transaction relating to PJM or to PJM's markets.

11. Employees of the Market Monitoring Unit must advise their supervisor(s) in the event they seek employment with a Market Participant, and must disqualify themselves from participating in any matter that would have an effect on the financial interest of the Market Participant while still in the employ of the Market Monitoring Unit.

Corporate Experience Example 2: PJM Interconnection

Monitoring Analytics has fifteen years of experience as the independent market monitor for PJM. Monitoring Analytics, LLC was established as a separate company in 2008, created by spinning off the Market Monitoring Unit of PJM Interconnection. PJM Interconnection, a regional transmission organization, ensures the reliability of the electric power supply system in 13 states and the District of Columbia. Since 1999, the PJM Market Monitoring Unit has been responsible for promoting a robust, competitive and nondiscriminatory electric power market in PJM by implementing the PJM Market Monitoring Plan. Monitoring Analytics continues to serve as the Independent Market Monitor for PJM under a long-term contract. Monitoring Analytics has extensive experience producing reports on a variety of market topics. Our reports and presentations can be found on the Monitoring Analytics web site at: <http://www.monitoringanalytics.com>.

Total contract value is approximately \$80 million from 2008 through 2015.

Corporate Experience Example 3: Southwest Power Pool (SPP)

Since 2013, Monitoring Analytics has advised SPP on the establishment of SPP's internal Market Monitoring Unit (MMU), and continues to provide consulting to SPP MMU staff. Monitoring Analytics has assisted the SPP MMU in defining standard practices for calculating generator costs for purposes of developing cost based offers and market power mitigation tools.

Monitoring Analytics developed a Java-based web application for collecting generator cost and performance data from hundreds of market participant companies for thousands of generating units in SPP and PJM. This Market Monitoring Data Depository (MMDD) also includes an opportunity cost calculator (OCC) which is coded in SAS and uses GAMS optimization to simulate the optimal dispatch of environmentally constrained generating units for the purpose of calculating the foregone future revenue resulting from being dispatched in the current hour.

For details, see <http://www.monitoringanalytics.com/tools/sppmddhelp.shtml>

Total contract value is approximately \$1,500,000 from 2013 through 2016.

Corporate Experience Example 4: New Zealand Electricity Authority

Monitoring Analytics was hired in 2014 by the New Zealand Electricity Authority to a review its spot market with the goal of determining any modifications that could be taken to improve competition across the electricity industry, with an emphasis on improvements that would facilitate retail competition.

Monitoring Analytics provided a report that reviewed critical aspects of New Zealand’s existing spot market design and provided a number of market design suggestions aimed at achieving the Authority’s goals to reduce barriers to entry; facilitate consumer participation; provide efficient price transparency and efficiency; improve competition in the wholesale, retail and hedge markets; and promote flexibility and resiliency. Monitoring Analytics is continuing to provide advice as New Zealand Electricity Authority begins taking steps to implement the suggested changes.

Total contract value is approximately \$30,000 from 2014 through 2015.

References

See references in Attachment B.

Work Plan and Work Schedule

The following twelve tasks are proposed to be performed as specified in Appendix A of the RFP. Monitoring Analytics includes the following additional details as explanation for how we will satisfy the scope of the RFP, but for purposes of reducing the length of the proposal, the scope of work in the RFP is included by reference, rather than including it word for word in this document.

The following sections also present the anticipated subtasks and resource hours estimated for each of the twelve tasks.

The approximate time frame for each of the tasks and associated subtasks is also included in Appendix D.

Task 1: Develop Final Work Plan and Schedule

The first task in January 2016 will be to complete a work plan and schedule. Throughout the period of the contract, the work plan and schedule will be revisited and maintained consistent with the needs of WCI and the participating jurisdictions.

BASE PERIOD							
Name:							
Task 1. Develop Final Work Plan and Schedule		Role	Project Manager	Senior Consultant	Senior Systems Consultant	Senior Consultant	Consultant
							Total Hours
1-1	Develop Final Work Plan and Schedule						
1-2	Maintain Work Plan						
Total:							

OPTION PERIOD							
Name:							
Task 1. Develop Final Work Plan and Schedule		Role	Project Manager	Senior Consultant	Senior Systems Consultant	Senior Consultant	Consultant
							Total Hours
1-1	Develop Final Work Plan and Schedule						
1-2	Maintain Work Plan						

Task 2: Prepare and Maintain a Security Plan

Security and confidentiality are part of the culture of Monitoring Analytics. Under the direction of [REDACTED], the CIO of Monitoring Analytics, we have developed information systems architecture and processes, policies, and procedures to be compliant with the NERC CIP requirements of PJM Interconnection. Monitoring Analytics will maintain the same high level of organizational capability, maturity and security for the WCI as is done for PJM Interconnection.

Monitoring Analytics proposes to use our existing policies and procedures, information systems and security assets, documentation, and organizational experience for this WCI Market Monitoring engagement. We have the opportunity to provide this high level of security assurance without having to develop it from the ground up. As a result, we can offer this capability without passing additional costs on to the WCI.

The existing system security plan includes the following sections, which will be reviewed in detail to determine if updates are necessary:

- 1) Security Policy
- 2) Organizational Responsibility
- 3) Points of Contact and Escalation
- 4) Interactions with WCI, Contractor, and Jurisdiction Staff
- 5) Confidential Data Handling
- 6) Security Incident Reporting
- 7) Data Storage Security and Protection
- 8) Backups
- 9) Data Access Control
- 10) Operational Data Handling

The following is the work plan for the sub tasks described for this Task 2, "Prepare a System Security Plan".

BASE PERIOD							
Name:							
Task 2. Prepare and Maintain a Security Plan	Role:	Project Manager	Senior Consultant	Senior Systems Consultant	Senior Consultant	Consultant	Total Hours
2-1	Prepare Security Plan						
2-2	Ongoing Maintenance						
Total:							

OPTION PERIOD							
Name:							
Task 2. Prepare and Maintain a Security Plan	Role:	Project Manager	Senior Consultant	Senior Systems Consultant	Senior Consultant	Consultant	Total Hours
2-1	Prepare Security Plan						
2-2	Ongoing Maintenance						

Task 3: Prepare and Maintain a Monitoring Plan

The foundation of a market monitoring program is a well-defined monitoring plan, understood by the market monitor, the responsible regulators, and the market administrator. The object of the Market Monitoring Plan is to define the responsibilities to objectively monitor, investigate, evaluate and report on the Cap and Trade program.

Monitoring Analytics has developed a Market Monitoring Plan for the WCI, and proposes to continue to execute that plan. Monitoring Analytics will also take the opportunity to review the existing monitoring plan and make updates as deemed appropriate in consultation with the WCI and the jurisdictions.

The monitoring plan includes the following elements:

- Roles and responsibilities
- Levels of authority
- Areas of coordination with regulators and the Auction Administrator (AA)
- Avenues for referral to regulators
- Data requirements of market administrators and participants
- Resources to be applied to monitoring (staff, systems, software and processes)
- Metrics proposed to be used, and proposed sources of information
- Reporting requirements of the market monitor
- Procedures for monitoring auctions, analyzing results, and assessing the effectiveness of market rules
- Procedures for monitoring and analyzing secondary market activity and assessing the effectiveness of the market rules regarding secondary market activity.

The following is the work plan and schedule for the sub tasks described for this Task 3, "Prepare a Monitoring Plan".

BASE PERIOD							
Name:							
Task 3. Prepare and Maintain a Monitoring Plan		Project Manager	Senior Consultant	Senior Systems Consultant	Senior Consultant	Consultant	Total Hours
3-1	Prepare Monitoring Plan						
3-2	Ongoing Maintenance						
Total:							

OPTION PERIOD							
Name:							
Task 3. Prepare and Maintain a Monitoring Plan		Project Manager	Senior Consultant	Senior Systems Consultant	Senior Consultant	Consultant	Total Hours
3-1	Prepare Monitoring Plan						
3-2	Ongoing Maintenance						

Task 4: Monitor Compliance Instrument Holdings; CITSS Transfer Activity; Secondary, Derivative, and Related Market Activity; and Market Structure

Monitoring Analytics has, in its role as the market monitor, created and maintained an Oracle database to contain data gathered from CITSS and other data relevant to monitoring the WCI Cap-and-Trade program. Monitoring Analytics will, in its role as the market monitor, continue to populate and maintain an Oracle database containing data gathered from CITSS and other data relevant to monitoring the WCI Cap-and-Trade program, including data from public and commercial sources.

Monitoring Analytics will maintain the database to track allowance transactions, and will follow the holdings of auction and post-auction market participants.

Monitoring Analytics currently tracks track, and will continue to monitor, holdings at the associate and parent level, rolling up affiliate positions to a single ultimate owner account, to monitor for anti-competitive behavior. Monitoring Analytics currently assists and will continue to assist the jurisdictional tracking of corporate relationships for purposes of verifying corporate associations.

Monitoring Analytics currently reviews and will continue to review anomalous behavior in allowance holdings, as well as review potential market activity rule violations. Any anomalies of potential violations that are discovered will be reported to the jurisdictions within one business day of discovery.

Monitoring Analytics has performed each required element under this task for WCI jurisdictions and performs similar data handling, tracking and analysis functions for the PJM markets on a daily basis.

The following is the work plan and schedule for the sub tasks described for this Task 4, "Monitor Allowance Holdings and Transfer Activity".

		BASE PERIOD					
Name:							
Task 4. Monitor Compliance Instrument Holdings; CITSS Transfer Activity; Secondary, Derivative, and Related Market Activity; and Market Structure		Project Manager	Senior Consultant	Senior Systems Consultant	Senior Consultant	Consultant	Total Hours
	Role:						
4-1	Capture & Convert CITSS Data, Update Infrastructure						
4-2	Analyze Holdings, Secondary Market Data						
4-3	Weekly Meetings with Jurisdictions, WCI						
4-4	Quarterly Reports						
4-5	Annual Reports						
Total:							

		OPTION PERIOD					
Name:							
Task 4. Monitor Compliance Instrument Holdings; CITSS Transfer Activity; Secondary, Derivative, and Related Market Activity; and Market Structure	Role:	Project Manager	Senior Consultant	Senior Systems Consultant	Senior Consultant	Consultant	Total Hours
4-1	Capture & Convert CITSS Data, Update Infrastructure						
4-2	Analyze Holdings, Secondary Market Data						
4-3	Weekly Meetings with Jurisdictions, WCI						
4-4	Quarterly Reports						
4-5	Annual Reports						

Task 5: Provide Independent Review of Participant Corporate Structure

Monitoring Analytics staff is currently responsible for processing parent information provided by WCI and the jurisdictions, and comparing that information to information collected from public or commercial sources. Monitoring Analytics will continue to use this information to assist the jurisdictional tracking of corporate relationships for purposes of verifying corporate associations. Monitoring Analytics will continue to maintain a database to track corporate structure and ultimate parent assignment for market power analysis. Monitoring Analytic will confirm the results of this analysis with the jurisdictions.

		BASE PERIOD					
Name:							
Task 5. Provide Independent Review of Participant Corporate Structure	Role:	Project Manager	Senior Consultant	Senior Systems Consultant	Senior Consultant	Consultant	Total Hours
5-1	Receive, Manage, and Process Jurisdiction, CITSS, Internet, and Subscription Data						
5-2	Perform Ultimate Parent Market Power Analysis						
5-3	Review and Confirm Analysis with Jurisdictions						
Total:							

		OPTION PERIOD					
Name:							
Task 5. Provide Independent Review of Participant Corporate Structure	Role:	Project Manager	Senior Consultant	Senior Systems Consultant	Senior Consultant	Consultant	Total Hours
5-1	Receive, Manage, and Process Jurisdiction, CITSS, Internet, and Subscription Data						
5-2	Perform Ultimate Parent Market Power Analysis						
5-3	Review and Confirm Analysis with Jurisdictions						

Task 6: Audit and Monitor the Auctions

Monitoring Analytics staff currently monitors and will continue to monitor the structure, conduct, and performance of the Cap and Trade auctions. This monitoring takes place prior to the auctions (in the auction design and participant registration and qualification stages); during the auctions (on conference calls with the Auction Administrator and jurisdiction staffs, and observing bids through the auction application); and after the auctions (reviewing post auction results and activity in the secondary markets.)

Structure: Monitoring auction, or market, structure consists of identifying the number of market participants, the types of organizations that are participating (e.g. compliance entities versus non-compliance entities, physical hedge versus financial speculation) the ownership and affiliate structure of those organizations, and calculating market shares, residual supplier indices and other structural metrics that indicate the presence of market power and the potential ability to manipulate prices. The analysis of market structure can provide the basis for proposing market power mitigation strategies when appropriate.

In our experience, an important purpose of analyzing market structure is understanding the relationships that exist between and among market participants. Organizations that are affiliates under a single corporate parent are treated as a single entity when analyzing market structure and the incentives to exercise market power. Extra care will be taken to understand the relationships between and among qualified market participants.

Conduct: Monitoring conduct has two major elements: 1) analyzing participant conduct or behavior, and 2) reviewing the performance of the auction administrator.

Analysis of participant behavior includes bid/offer prices in the auctions and participants' compliance with auction rules and timelines. Market participants may try to exploit flaws in the auction design and rules and behave in an unexpected manner. Monitoring participant bid/offer pricing, volumes, and timing can provide insight into attempts to exploit market rules.

Analysis of auction administrator conduct includes reviewing performance of the auction administration and auction clearing software and processes, reviewing procedures followed to register and qualify auction participants, reviewing procedures to ensure appropriate handling of confidential auction information, transparent compliance with auction rules, and ensuring that unexpected circumstances throughout the auction are handled in a fair and transparent manner.

Performance: Monitoring auction performance provides insight into the outcomes of the auctions: Do the auctions result in prices that reflect the economic fundamentals of the market for allowances?

The following is the work plan and schedule for the sub tasks described for this Task 6, "Audit and Monitor the Auctions."

BASE PERIOD							
Name:							
Task 6. Audit and Monitor the Auctions	Role:	Project Manager	Senior Consultant	Senior Systems Consultant	Senior Consultant	Consultant	Total Hours
6-1	Gather and Process Auction Data						
6-2	Monitor Conduct of Auction						
6-3	Analysis of Auctions						
6-4	Auction Report						
Total:							

OPTION PERIOD							
Name:							
Task 6. Audit and Monitor the Auctions	Role:	Project Manager	Senior Consultant	Senior Systems Consultant	Senior Consultant	Consultant	Total Hours
6-1	Gather and Process Auction Data						
6-2	Monitor Conduct of Auction						
6-3	Analysis of Auctions						
6-4	Auction Report						
Total:							

Task 7: Audit and Monitor the Reserve Sales

The effort for this task is proposed to match that of monitoring the auctions. The reserve sales will follow different procedures, and will be conducted independently by jurisdiction, and so have the potential to occur more frequently than the joint auctions. However, to date, the WCI jurisdiction reserve sales have not required market monitoring effort, so these labor estimates may be conservative, and in the absence of a reserve sale event, not expected to be incurred.

The following is the work plan and schedule for the sub tasks described for this Task 7, "Audit and Monitor the Reserve Sales."

BASE PERIOD

		Name:						
Task 7. Audit and Monitor the Reserve Sales		Role:	Project Manager	Senior Consultant	Senior Systems Consultant	Senior Consultant	Consultant	Total Hours
7-1	Gather and Process Reserve Sale Data							
7-2	Monitor Conduct of Reserve Sales							
7-3	Analysis of Reserve Sales							
7-4	Reserve Sale Report							
Total:								

OPTION PERIOD

		Name:						
Task 7. Audit and Monitor the Reserve Sales		Role:	Project Manager	Senior Consultant	Senior Systems Consultant	Senior Consultant	Consultant	Total Hours
7-1	Gather and Process Reserve Sale Data							
7-2	Monitor Conduct of Reserve Sales							
7-3	Analysis of Reserve Sales							
7-4	Reserve Sale Report							
Total:								

Task 8: Participate in Auction Services Testing and Demonstration

Under the current contract with WCI and the jurisdictions, Monitoring Analytics has played a significant role in evaluating the auction platform functionality and auction clearing logic.

Should a new Auction Administrator be contracted by WCI, Monitoring Analytics expects that there will be a need for significant additional testing as the new auction application is developed.

The following is the work plan and schedule for the sub tasks described for this Task 8, "Participate in Auction Services Testing and Demonstration."

BASE PERIOD

		Name:						
Task 8. Participate in Auction Services Testing and Demonstration		Role:	Project Manager	Senior Consultant	Senior Systems Consultant	Senior Consultant	Consultant	Total Hours
8-1	Consultation on Auction Algorithms							
8-2	Development of Auction Test Cases							
8-3	Auction Platform Testing - Monitoring							
8-4	Meetings with AA and Jurisdictions re AA Development							
8-5	Observation of and Memoranda on AA Development							
8-6	Support for Ongoing AA Enhancements							
Total:								

		OPTION PERIOD						
		Name:						
	Task 8. Participate in Auction Services Testing and Demonstration	Role:	Project Manager	Senior Consultant	Senior Systems Consultant	Senior Consultant	Consultant	Total Hours
8-1	Consultation on Auction Algorithms							
8-2	Development of Auction Test Cases							
8-3	Auction Platform Testing - Monitoring							
8-4	Meetings with AA and Jurisdictions re AA Development							
8-5	Observation of and Memoranda on AA Development							
8-6	Support for Ongoing AA Enhancements							

Task 9: Review Participating Jurisdiction Regulations and Other Program Documentation

Monitoring Analytics has provided and will continue to provide the advice requested in the RFP. The delivery of this task will consist of a thorough review of the documented auction rules, followed by a written memorandum of recommendations and questions for the considerations listed in the RFP.

Consideration is given to the possibility that new jurisdictions will be added to the WCI, and the effort required to harmonize the regulations of new jurisdictions with the regulations of existing participating jurisdictions.

The following is the work plan and schedule for the sub tasks described for this Task 9, "Review Participating Jurisdiction Regulations and Other Program Documentation".

		BASE PERIOD						
		Name:						
	Task 9. Review Participating Jurisdiction Regulations and Other Program Documentation	Role:	Project Manager	Senior Consultant	Senior Systems Consultant	Senior Consultant	Consultant	Total Hours
9-1	Review CA regulations							
9-2	Review QC regulations							
9-3	Review New Jurisdiction Regulations							
9-4	Review Other Documentation							
Total:								

		OPTION PERIOD						
		Name:						
	Task 9. Review Participating Jurisdiction Regulations and Other Program Documentation	Role:	Project Manager	Senior Consultant	Senior Systems Consultant	Senior Consultant	Consultant	Total Hours
9-1	Review CA regulations							
9-2	Review QC regulations							
9-3	Review New Jurisdiction Regulations							
9-4	Review Other Documentation							

Task 10: Linking with Additional Jurisdictions

The addition of new jurisdictions to the WCI program would require additional effort for integrating the new jurisdictions into existing processes, as well as updating and testing existing analytical and data infrastructure.

The following is the work plan and schedule for the sub tasks described for this Task 10, "Linking with Additional Jurisdictions."

		BASE PERIOD						
	Name:							
	Task 10. Linking with Additional Jurisdictions	Role:	Project Manager	Senior Consultant	Senior Systems Consultant	Senior Consultant	Consultant	Total Hours
10-1	Meetings with Linking Jurisdictions							
10-2	Impact on Analytic Work (Code and Processes)							
10-3	Impact on Infrastructure							
10-4	Testing AA Algorithms							
Total:								

		OPTION PERIOD						
	Name:							
	Task 10. Linking with Additional Jurisdictions	Role:	Project Manager	Senior Consultant	Senior Systems Consultant	Senior Consultant	Consultant	Total Hours
10-1	Meetings with Linking Jurisdictions							
10-2	Impact on Analytic Work (Code and Processes)							
10-3	Impact on Infrastructure							
10-4	Testing AA Algorithms							

Task 11: Provide Knowledge Transfer and Ad Hoc Reports

Task 12: Optional Task: Transition Out

The level of effort for Tasks 11 and 12 remain undefined, as specified in the RFP. The following are the hours allocated to these tasks, as required in the RFP.

Labor Category	Task 11		Task 12	
	Base	Option	Base	Option
Project Manager				
Senior Consultant				
Consultant				
Junior Consultant				
Senior Systems Consultant				
Systems Consultant				
Systems Analyst				
Clerical/Admin Support				

██████████ is the Chief Information Officer of Monitoring Analytics. ██████████ has 25 years of experience in developing and managing complex databases and applications. For the WCI engagement, she has been the technical lead, responsible for information technology, data management, and security. For the last 15 years, she has been the technical lead for the Monitoring Analytics “Market Monitoring System” at PJM Interconnection. Prior to working at PJM Interconnection, ██████████ was employed by PECO, Actium Corporation, and Martin Marietta. ██████████ has a B.S. in Electrical Engineering, and an M.S. in Computer Engineering from Villanova University.

██████████ has served as the ARB/WCI, Inc. Market Monitor technology lead since 2012, and is responsible for managing CITSS data for the ARB jurisdiction.

██████████ is a project manager at Monitoring Analytics. Since 2005, he has provided project and process management support, coordinating software and database development, as well as managing the timely delivery of key Monitoring Analytics products. For the WCI engagement, he has served in an operations support and alternate project manager role, monitoring auctions, managing data and communications, and managing deliverable quality. Prior to his work for Monitoring Analytics and the PJM MMU, ██████████ worked for KPMG Consulting and Lockheed Martin/BAE Systems. ██████████ is a certified Project Management Professional, and has a B.A. in Economics from Haverford College, an M.S. in Manufacturing Engineering from Boston University and an M.B.A. from Babson College.

██████████ has served as ARB/WCI, Inc. Market Monitor operations support and alternate project manager since 2012, and is responsible for managing CITSS data for the MDDELCC jurisdiction.

██████████ is an Analyst at Monitoring Analytics. For the WCI engagement, she has been responsible for coding, analysis, confirming auction results, developing reporting metrics, and tracking the secondary market. She is responsible for monitoring PJM generator performance, analyzing generator reliability models, and performing outage risk analysis. ██████████ is also involved in the development and analysis of net revenue models. Prior to Monitoring Analytics, ██████████ was an analyst with an investment banking firm in New York and Miami. ██████████ also has experience with Pacific Gas & Electric, where she assisted in developing a revenue model for the gas division. She has a Bachelor of Science in Mathematics from Yale University and a Masters in Economics from Temple University.

██████████ is an Analyst at Monitoring Analytics. For the WCI engagement, he has been responsible for independent entity corporate association research, analysis of bilateral trades reported through CITSS, and entity emissions obligations and compliance. He has worked for Monitoring Analytics since 2011. His primary areas of focus include market power mitigation in the PJM Energy Market, generator offers and operational flexibility, tracking ownership of PJM participants, and interaction between natural gas and power markets. Siva has an MA in Energy and Earth Resources from the University of Texas at Austin and worked as a commodity derivatives trader for a proprietary trading firm.

References

See Technical Proposal Attachment B “Proposer References Form” of this proposal.

Subcontract/Subcontractors

No subcontractors are included in this proposal.

D. Management Plan

The Monitoring Analytics team will be led by Dr. Joseph Bowring as Project Manager. [REDACTED] will provide guidance and direction to the Monitoring Analytics team, and will be available to advise WCI, Inc., and the jurisdictions. [REDACTED] will be involved in the design and production of all deliverables and analytical work product.

Day-to-day direction for this project will be provided by [REDACTED] the Chief Economist for Monitoring Analytics.

[REDACTED] will be responsible for communications with WCI and jurisdiction staff and developing and coordinating analysis. [REDACTED] regularly coordinates progress, planning, and implementation of tasks through weekly calls with WCI and jurisdiction staff.

Staff analysts will provide the day to day execution of the monitoring plan.

Information Technology support will be provided by [REDACTED], the Chief Information Officer for Monitoring Analytics. Monitoring Analytics has a full staff of IT and analytical resources available to support the project team in setting up a technical environment, executing analysis or developing work product.

Day to day operations support will be provided by [REDACTED], a project manager at Monitoring Analytics.

The specific task by task roles and responsibilities and labor hours proposed are detailed in the "Work Plan and Work Schedule" section of this proposal.

This proposal defines the budgets for each of the twelve proposed tasks, and breaks each of the twelve tasks into sub-tasks, which can be used to track progress and to support the billing process.

Monitoring Analytics will provide billing data based on Work Breakdown Structure codes in our time reporting system, into which our project team report their labor hours.

This management structure and the associated processes have been in place and successfully supported the WCI market monitoring effort since our work with WCI began in 2012.

In Table 13A and Table 14A of this proposal, we estimate the percent of work hours that each resource will bill WCI for the market monitoring effort, as well as the hours per month. Monitoring Analytics staff will be available for 100 percent of the hours required to complete the WCI market monitoring task.

Cost Proposal

The total maximum cost for this proposal is [REDACTED] for the base period and [REDACTED] for the option period, not including any applicable sales tax.

As specified in the RFP 2015-03, for each task, the cost will be specified on a Time and Materials (T&M) basis. The total proposed price for each task shall be considered a Not-to-Exceed (NTE) limit unless approved in writing by WCI.

The total proposed cost represents our conservative estimate for completion of each task. Most, if not all, of the tasks are expected to come in under the individual task's budget. The WCI, Inc. RFP has established the requirement that individual task budgets are not to exceed the proposed limit for each task (notwithstanding the overall project budget) unless approved in writing by WCI, Inc. Should an individual task consume more budget than originally proposed for that task, Monitoring Analytics and WCI, Inc. will work together to reallocate the total budget to reflect the relative effort of each task.

Jointly with the WCI administration, and the ARB and MDDELCC staff, we have developed a mature market monitoring program, for which we expect to bill less than [REDACTED] in 2015. We expect that the steady-state monitoring program will continue to operate efficiently and cost effectively in future years. The not-to-exceed total included in this proposal also provides the required flexibility to accommodate the increased work load that would result from changes in program scope anticipated in the RFP, including the addition of new jurisdictions and the engagement of a new auction administrator. Under the current contract, this flexibility has allowed WCI jurisdictions to include Monitoring Analytics in ad-hoc investigations and analyses that add value to the cap-and-trade program.

The offer contained in this proposal constitutes an irrevocable offer for a period of 180 days after proposal submission.

The details of the Cost Proposal are included in the cost tables in Appendix C

Exceptions to WCI, Inc. Standard Contract Form

Monitoring Analytics accepts the WCI, Inc. Standard Terms and Conditions.

Appendix A: Resumes of Proposed Resources

Pages 29 - 40 of the proposal from Monitoring Analytics, LLC contains the resumes of key personnel. These pages have been removed from the public document for business confidentiality and competitiveness reasons.

Appendix B – Proposer References Form

The following four references illustrate Monitoring Analytics work experience relevant to the goals and objectives outlined in this RFP.

REFERENCE 1			
Name of Firm: California Air Resources Board			
	Sacramento	CA	95814
Street Address	City	State	Zip Code
Contact Person		Telephone Number	
		Email:	
Dates of Service 2012 – current		Value or Cost of Service:	
Brief Description of Service Provided			

REFERENCE 2			
Name of Firm: Québec Ministry of Développement Durable Environnement et Lutte Contre les Changements Climatiques (MDDELCC)			
	Québec	Québec	G1R 5V7
Street Address	City	State	Zip Code
Contact Person		Telephone Number	
		Email:	
Dates of Service 2013 – Current		Value or Cost of Service: >	
Brief Description of Service Provided			

REFERENCE 3			
Name of Firm: California ISO			
	Folsom	CA	95630
Street Address	City	State	Zip Code
Contact Person 		Telephone Number 	
		Email: 	
Dates of Service 		Value or Cost of Service: 	
Brief Description of Service Provided			

REFERENCE 4			
Name of Firm: PJM Interconnection			
	Norristown	PA	19403-2497
Street Address	City	State	Zip Code
Contact Person 		Telephone Number 	
		Email: 	
Dates of Service 		Value or Cost of Service: 	
Brief Description of Service Provided			

Appendix C – Cost Tables

Table 1 Billing rates by labor category, base period and option period

Labor Category	Base Period Rate	Option Period Rate
Project Manager		
Senior Consultant		
Consultant		
Junior Consultant		
Senior Systems Consultant		
Systems Consultant		
Systems Analyst		
Clerical/Admin Support		

Table 2 Personnel labor category assignment

Name	Labor Category
	Project Manager
	Senior Consultant
	Senior Systems Consultant
	Senior Consultant
Analyst	Consultant

Table A-1 Hours and Cost for Task 1, Develop Final Work Plan

Table A-1 (Develop Final Work Plan)	Base Period			Option Period			
	Labor Category	Proposed Hours	Rate (\$/hour)	Total Cost (\$)	Proposed Hours	Rate (\$/hour)	Total Cost (\$)
Project Manager							
Senior Consultant							
Consultant							
Senior Systems Consultant							
Total			Base Total:				Option Total:

Table A-2 Hours and Cost for Task 2, Develop Security Plan

Table A-2 (Security Plan)	Base Period			Option Period			
	Labor Category	Proposed Hours	Rate (\$/hour)	Total Cost (\$)	Proposed Hours	Rate (\$/hour)	Total Cost (\$)
Project Manager							
Senior Consultant							
Consultant							
Senior Systems Consultant							
Total			Base Total: \$ 3,800				Option Total: \$ 1,440

Table A-3 Hours and Cost for Task 3, Develop Monitoring Plan

Table A-3 (Monitoring Plan)	Base Period			Option Period			
	Labor Category	Proposed Hours	Rate (\$/hour)	Total Cost (\$)	Proposed Hours	Rate (\$/hour)	Total Cost (\$)
Project Manager							
Senior Consultant							
Consultant							
Senior Systems Consultant							
Total			Base Total: \$ 5,600				Option Total: \$ 1,440

Table A-4 Hours and Cost for Task 4, Monitor Holdings and Secondary Market

Table A-4 (Monitor Holdings and Secondary Market)	Base Period			Option Period		
	Proposed Hours	Rate (\$/hour)	Total Cost (\$)	Proposed Hours	Rate (\$/hour)	Total Cost (\$)
Labor Category						
Project Manager						
Senior Consultant						
Consultant						
Senior Systems Consultant						
Total		Base Total:	\$		Option Total:	\$

Table A-5 Hours and Cost for Task 5, Corporate Structure Review

Table A-5 (Corporate Structure Review)	Base Period			Option Period		
	Proposed Hours	Rate (\$/hour)	Total Cost (\$)	Proposed Hours	Rate (\$/hour)	Total Cost (\$)
Labor Category						
Project Manager						
Senior Consultant						
Consultant						
Senior Systems Consultant						
Total		Base Total:			Option Total:	

Table A-6 Hours and Cost for Task 6, Monitor Auctions

Table A-6 (Monitor Auctions)	Base Period			Option Period		
	Proposed Hours	Rate (\$/hour)	Total Cost (\$)	Proposed Hours	Rate (\$/hour)	Total Cost (\$)
Labor Category						
Project Manager						
Senior Consultant						
Consultant						
Senior Systems Consultant						
Total		Base Total:			Option Total:	

Table A-7 Hours and Cost for Task 7, Monitor Reserve Sales

Table A-7 (Monitor Reserve Sales)	Base Period			Option Period		
	Proposed Hours	Rate (\$/hour)	Total Cost (\$)	Proposed Hours	Rate (\$/hour)	Total Cost (\$)
Labor Category						
Project Manager						
Senior Consultant						
Consultant						
Senior Systems Consultant						
Total		Base Total:			Option Total:	

Table A-8 Hours and Cost for Task 8, Auction Services Testing

Table A-8 (Auction Services Testing)	Base Period			Option Period		
	Proposed Hours	Rate (\$/hour)	Total Cost (\$)	Proposed Hours	Rate (\$/hour)	Total Cost (\$)
Labor Category						
Project Manager						
Senior Consultant						
Consultant						
Senior Systems Consultant						
Total		Base Total:			Option Total:	

Table A-9 Hours and Cost for Task 9, Regulation Review

Table A-9 (Review Regulations)	Base Period			Option Period		
	Proposed Hours	Rate (\$/hour)	Total Cost (\$)	Proposed Hours	Rate (\$/hour)	Total Cost (\$)
Labor Category						
Project Manager						
Senior Consultant						
Consultant						
Senior Systems Consultant						
Total		Base Total:			Option Total:	

Table A-10 Hours and Cost for Task 10, Linking Jurisdictions

Table A-10 (Linking Jurisdictions)	Base Period			Option Period		
	Proposed Hours	Rate (\$/hour)	Total Cost (\$)	Proposed Hours	Rate (\$/hour)	Total Cost (\$)
Project Manager						
Senior Consultant						
Consultant						
Senior Systems Consultant						
Total		Base Total:			Option Total:	

Table A-11 Hours⁴ and Cost for Task 11, Knowledge Transfer

Table A-11 (Knowledge Transfer)	Base Period			Option Period		
	Proposed Hours	Rate (\$/hour)	Total Cost (\$)	Proposed Hours	Rate (\$/hour)	Total Cost (\$)
Project Manager						
Senior Consultant						
Consultant						
Junior Consultant						
Senior Systems Consultant						
Systems Consultant						
Systems Analyst						
Clerical/Admin Support						
Total		Base Total:			Option Total:	

Table A-12 Hours⁵ and Cost for Task 12, Transition Out

Table A-12 (Transition Out)	Base Period			Option Period		
	Proposed Hours	Rate (\$/hour)	Total Cost (\$)	Proposed Hours	Rate (\$/hour)	Total Cost (\$)
Project Manager						
Senior Consultant						
Consultant						
Junior Consultant						
Senior Systems Consultant						
Systems Consultant						
Systems Analyst						
Clerical/Admin Support						
Total		Base Total:			Option Total:	

⁴ The hours for this task 11 were prescribed in the RFP.

⁵ The hours in this task 12 were prescribed in the RFP.

Table A- 13 Task hours and total cost by resource, Base Period

Staff Name	Labor Category	Rate (\$/hr)	Task 1 (Hrs)	Task 2 (Hrs)	Task 3 (Hrs)	Task 4 (Hrs)	Task 5 (Hrs)	Task 6 (Hrs)	Task 7 (Hrs)	Task 8 (Hrs)	Task 9 (Hrs)	Task 10 (Hrs)	Task 11 (Hrs)	Task 12 (Hrs)	Total Hours	Total Cost
	Project Manager															
	Senior Consultant															
	Senior Systems Consultant															
	Senior Consultant															
	Analyst															
	Junior Consultant															
	Systems Consultant															
	Systems Analyst															
	Clerical/Admin Support															
Total:																

Table A- 14 Task hours and total cost by resource, Option Period

Staff Name	Labor Category	Rate (\$/hr)	Task 1 (Hrs)	Task 2 (Hrs)	Task 3 (Hrs)	Task 4 (Hrs)	Task 5 (Hrs)	Task 6 (Hrs)	Task 7 (Hrs)	Task 8 (Hrs)	Task 9 (Hrs)	Task 10 (Hrs)	Task 11 (Hrs)	Task 12 (Hrs)	Total Hours	Total Cost
	Project Manager															
	Senior Consultant															
	Senior Systems Consultant															
	Senior Consultant															
	Analyst															
	Junior Consultant															
	Systems Consultant															
	Systems Analyst															
	Clerical/Admin Support															
Total:																

Table A-13A Total hours, percent of hours, and hours by month by resource, Base Period⁶

Staff Name	Total Hours	Percent Hours Proposed	Number of Hours Per Month
Analyst			
Junior Consultant			
Systems Consultant			
Systems Analyst			
Clerical/Admin Support			

Table A-14A Total hours, percent of hours, and hours by month by resource, Option Period⁷

Staff Name	Total Hours	Percent Hours Proposed	Number of Hours Per Month
Analyst			
Junior Consultant			
Systems Consultant			
Systems Analyst			
Clerical/Admin Support			

Table B Other Direct Costs, Base Period and Option Period

Other Direct Cost (Special)	Unit Cost (\$)	Annual Cost (\$)	Total Program Cost (\$)	
			Base Period*	Option Period**
PointCarbon subscription				
Other Direct Costs (General)				
Total				

*Annual times 4.17 **Annual times 2

⁶ Percent of hours estimated based on dividing by [redacted] hours worked per year.

⁷ Percent of hours estimated based on dividing by [redacted] hours worked per year.

Table C Summary of Costs by Task

Description of Services	Total Costs (\$)	
	Base Period	Option Period
Task 1. Develop Final Work Plan and Schedule		
Task 2. Prepare and Maintain a Security Plan		
Task 3. Prepare and Maintain a Monitoring Plan		
Task 4. Monitor Compliance Instrument Holdings; CITSS Transfer Activity; Secondary, Derivative, and Related Market Activity; and Market Structure		
Task 5. Provide Independent Review of Participant Corporate Structure		
Task 6. Audit and Monitor the Auctions		
Task 7. Audit and Monitor the Reserve Sales		
Task 8. Participate in Auction Services Testing and Demonstration		
Task 9. Review Participating Jurisdiction Regulations and Other Program Documentation		
Task 10. Linking with Additional Jurisdictions		
Task 11. Provide Knowledge Transfer and Ad Hoc Reports		
Task 12. Optional Task: Transition Out		
Other Direct Costs (from Table B)		
Total:		

Appendix D – Task Timing

	Task/Subtask Description	Start Date	End Date
	Task 1. Develop Final Work Plan and Schedule		
1-1	Develop Final Work Plan and Schedule		
1-2	Maintain Work Plan	Ongoing	
	Task 2. Prepare and Maintain a Security Plan		
2-1	Prepare Security Plan		
2-2	Ongoing Maintenance	Ongoing	
	Task 3. Prepare and Maintain a Monitoring Plan		
3-1	Prepare Monitoring Plan		
3-2	Ongoing Maintenance	Ongoing	
	Task 4. Monitor Compliance Instrument Holdings; CITSS Transfer Activity; Secondary, Derivative, and Related Market Activity; and Market Structure		
4-1	Capture & Convert CITSS Data, Update Infrastructure	Monthly	
4-2	Analyze Holdings, Secondary Market Data	Monthly	
4-3	Weekly Meetings with Jurisdictions, WCI	Weekly	
4-4	Quarterly Reports	Quarterly	
4-5	Annual Reports	Annually	
	Task 5. Provide Independent Review of Participant Corporate Structure		
5-1	Receive, Manage, and Process Jurisdiction, CITSS, Internet, and Subscription Data	Monthly	
5-2	Perform Ultimate Parent Market Power Analysis	Quarterly	
5-3	Review and Confirm Analysis with Jurisdictions	Quarterly	
	Task 6. Audit and Monitor the Auctions		
6-1	Gather and Process Auction Data	Quarterly	
6-2	Monitor Conduct of Auction	Quarterly	
6-3	Analysis of Auctions	Quarterly	
6-4	Auction Report	Quarterly	
	Task 7. Audit and Monitor the Reserve Sales		
7-1	Gather and Process Reserve Sale Data	Quarterly	
7-2	Monitor Conduct of Reserve Sales	Quarterly	
7-3	Analysis of Reserve Sales	Quarterly	
7-4	Reserve Sale Report	Quarterly	
	Task 8. Participate in Auction Services Testing and Demonstration		
8-1	Consultation on Auction Algorithms	As needed	
8-2	Development of Auction Test Cases	As needed	
8-3	Auction Platform Testing - Monitoring	As needed	
8-4	Meetings with AA and Jurisdictions re AA Development	As needed	
8-5	Observation of and Memoranda on AA Development	As needed	
8-6	Support for Ongoing AA Enhancements	As needed	
	Task 9. Review Participating Jurisdiction Regulations and Other Program Documentation		
9-1	Review CA regulations	As needed	
9-2	Review QC regulations	As needed	
9-3	Review New Jurisdiction Regulations	As needed	
9-4	Review Other Documentation	As needed	
	Task 10. Linking with Additional Jurisdictions		
10-1	Meetings with Linking Jurisdictions	As needed	
10-2	Impact on Analytic Work (Code and Processes)	As needed	
10-3	Impact on Infrastructure	As needed	
10-4	Testing AA Algorithms	As needed	

