REC 17-004

March 6, 2017

Kevin Monagle
31 Louis Drive
Wellesley, MA 02481

State of New Hampshire
Public Utilities Commission
21 S. Fruit St, Suite 10
Concord, NH 03301-2429

NHPUC 3APR'17PM12:14

Attention: Debra Howland, Executive Director
Copy to: executive.director@puc.nh.gov and barbara.bernstein@puc.nh.gov

Re: Application to qualify as an independent monitor
For verification of electricity or useful thermal energy production from eligible customer-sited sources

Dear Ms. Howland,

I am writing on behalf of Quantitative Business Analytics LLC, a prospective independent monitor for verification of electricity or useful thermal energy production from eligible, New Hampshire customer-sited sources. We wish to submit the attached application (Exhibit 1) to quality QBA as an independent monitor as provided by PUC 2505.09(a).

About Quantitative Business Analytics, LLC ("QBA")
Quantitative Business Analytics provides technology and analytical services to the energy industry. QBA works with major utility companies, providing services that include:

- Planning and implementation of smart grid infrastructure and systems;
- Monitoring and related analytical services for behind the meter and utility scale distributed energy resources; and
- Cloud based meter data management and related application services.

Today, QBA monitors the operation of approximately 10,000 behind-the-meter and utility scale solar installations.

About QBA's Independent Monitoring Service
QBA is a Data Acquisition Service Provider for the monitoring and reporting of solar power generated in Massachusetts. We plan to offer this service across all of New England. Our independent monitoring service automates the following:

- Remote collection of data and events from revenue meters and inverters;
- Analysis and verification of metered solar power generated; and
- Reporting of energy production to the production tracking system (i.e. NEPOOL GIS for New Hampshire).

Our methodology for verification of solar production is based on the leading practices used by energy companies:

- Meter identifiers and operational status are matched to the meter installation information maintained by QBA;
- Meter event data is analyzed for tamper and other alerts that require further analysis and investigation;
- Meter reads are validated by a sum check comparing the interval detail records to the register read, high/low checks, gaps in the meter data and related analytics;
- Meter and interval data are compared to ensure the reported production is consistent with the physics of power conversion and capacity of the solar site; and
- Communication with the meter is monitored by a heartbeat ping – our headend triggers an alert when a revenue meter fails to respond within a tolerance setting configured by QBA.

When QBA detects an anomaly in the operation of the revenue meter, our first step for trouble shooting is to perform remote diagnostics on the revenue meter. We use remote diagnostics to assess the meter's operational state, the configuration of the meter and/or key functions. We use remote programming to reconfigure meters when necessary. If an issue cannot be resolved through remote diagnostics and programming, we alert the customer to the issue and work with the customer to resolve the incident. QBA's incident resolution process is provided to customers when the customer procures QBA equipment and/or subscribes to QBA monitoring and analytical services.

Petition for Rules Waiver

We petition the New Hampshire Public Utility Commission to grant QBA a waiver to the following rules:

QBA petition for waiver of 2505.09(a) requirement for customer to *"retain the services of an independent monitor directly or, if participating in aggregation pursuant to Puc 2506, through an aggregator*."

We petition for a waiver of the rule that requires that the customer-sited renewable energy source owner retain QBA services, as an independent monitor, directly. It is a common practice within the industry to include a service contract for a remote monitoring solution and related reporting services as one of many requirements priced in the delivery and installation of a complete PV system. The cost of QBA's independent monitoring for a fixed term (five years for example) can be included in the system purchase price charged to the installer, developer or financing company. After the end of this initial term, the facility owner can negotiate an extended independent monitoring services arrangement with QBA.

This transaction model provides PV system owners a reasonable and popular means for obtaining independent monitoring services to measure, verify, and report their PV system production, meeting the requirements for earning Renewable Energy Certificates. QBA's use of smart, revenue grade meters and automated, remote data collection provides the means to significantly reduce cost and eliminate potential data entry errors thereby improving reporting efficiency and quality. QBA automates the verification of meter reads, providing a substantial benefit a to renewable energy source owners by alerting the owners of issues that could adversely impact REC reporting. Also,

automation of remote data collection, detection of data gaps and errors and REC reporting allows QBA to ensure best practices are consistently applied to the benefit of all parties.

QBA requests a rules waiver under Puc 201 .05. We believe the rules waiver, if granted, is appropriate because QBA offers a remote, automated and independent monitoring service that will serve the public interest by increasing the efficiency, cost effective and quality of the service rendered to the consumer. Also, compliance with the rules would be onerous given consumer preference for all-inclusive, turnkey pricing to deliver and implement a complete PV system.

QBA petition for waiver of 2505.09(g) prohibiting customers from using an independent monitor *"who sold or installed the equipment used by the source*."

QBA understand the intent of this rule is to ensure that the independent monitor have no vested interest in the production of Renewable Energy Certificates (RECs) from any monitored renewable energy source. Though QBA may sell a monitoring solution to an installer, project developer, and/or financing company (depending on the type of project), QBA receives no compensation nor has other financial interest in the production of Renewable Energy Certificates by any renewable energy source using the QBA monitoring solutions and/or services.

QBA requests a waiver of this rule because QBA has no financial benefit in the production of Renewable Energy Certificates. In addition, the bundling of solution components with a turnkey packaging of the an overall PV system is independent of and in no way impacts our remote production monitoring and reporting services.

QBA petition for waiver of Puc 2505.09(i)(1), requiring an independent monitor *"To perform an initial inspection of source's meter for accuracy and capability to measure the electricity or useful thermal energy produced, unless the meter is owned by a distribution utility that has already inspected it pursuant to Puc 305*."

QBA offers a remote monitoring services that collects PV production data from revenue grade meters that have certified to comply with ANSI C12.20 requirements, including metrology with a tolerance of +/- 0.2% for accuracy of measurement data. In addition, QBA automates validations of measurement data, a method for providing assurance to all parties on the accuracy of the measurement data. QBA's approach is consistent with best practices for management of meter data.

We believe QBA's use of ANSI C12.20 compliant revenue meters certified as to accuracy and automation of best practices for independent validation of the accuracy of the measurement data offers an alternative means to comply with the intention of this rule. We confirm the installed meter to be accurate and capable of measuring the energy produced by using ANSI C12.20 compliant revenue meters. We automate validations of the accuracy of the meter data as collected, providing a continuous, remote inspection of the accuracy of the energy measurement data that is consistent with leading practices followed within the industry for meter data management.

We request a waiver of this rule as QBA offers an alternative, efficient and effective solution to ensuring the accuracy of metered energy production and which obviates the need for initial on-site inspection.

We look forward to your response to these matters and please let us know if you have any questions related to the attached application and our petition for rules waivers.

Sincerely,

Kevin Monagle, Partner
Quantitative Business Analytics, LLC

Exhibit 1 - APPLICATION TO QUALIFY AS AN INDEPENDENT MONITOR

State of New Hampshire
Public Utilities Commission
21 S. Fruit Street, Suite 10, Concord, NH 03301-2429

APPLICATION TO QUALIFY AS AN INDEPENDENT MONITOR

TO VERIFY ELECTRICITY OR USEFUL THERMAL ENERGY PRODUCTION FROM ELIGIBLE CUSTOMER-SITED SOURCES*

This independent monitor application must be filed with the Executive Director of the New Hampshire Public Utilities Commission (Commission). *The completed original application, as well as two copies and a cover letter requesting certification should be sent to:*

Debra Howland
Executive Director
State of New Hampshire
Public Utilities Commission
21 S. Fruit St, Suite 10
Concord, NH 03301-2429

An electronic version of the docket filing should be submitted to executive.director@puc.nh.gov and barbara.bernstein@puc.nh.gov. Contact Barbara Bernstein by email or phone 603-271-6011 with questions.

Any omissions and/or deficiencies which need to be corrected must be completed in a timely manner or the Commission may close the application process without prejudice.*

Please complete the following:					
Applicant Name:	Kevin Monagle, on behalf of Quantitative Business Analytics, LLC (QBA)				
Business Name:	Quantitative Business Analytics, LLC (QBA)				
Mailing Address 1:	31 Louis Drive				
Mailing Address 2:					
Town/ City:	Wellesley	State:	MA	Zip Code:	02481
Telephone:	781-354-9458	Cell:	781-354-9458		
Email	kmonagle@qbacorp.com				

2505.09	Independent Monitors
2505.09(a)	*An independent monitor shall verify the electricity production of a customer-sited source or the production of useful thermal energy from an eligible source and report such production and REC calculation to the GIS.*
2505.09(b)	*A distribution utility shall be eligible to serve as an independent monitor for customer-sited sources and sources producing useful thermal energy within its service territory, provided that the distribution utility employs one or more persons to perform monitoring tasks who meet the qualifications specified in paragraph (c) or (d). (See below).*

As **ATTACHMENT A**, please provide a copy of the license issued by the state of New Hampshire or such other qualifying certification as may be applicable.

	Electrical Production Independent Monitors	
2505.09(c)	*To qualify as an independent monitor who verifies **electrical production** please indicate which of the following apply to the applicant:*	
2505.09(c)(1)	An electrician licensed by the state of New Hampshire and in good standing.	☐
2505.09(c)(2)	A professional engineer licensed by the state of New Hampshire and in good standing.	☐
2505.09(c)(3)	A certified building analyst professional or a certified mechanical professional as certified by the Building Performance Institute, Inc. of Malta, New York.	☐
2505.09(c)(4)	A certified energy manager as certified by the Association of Energy Engineers.	☐
2505.09(c)(5)	A home energy rater as certified by Residential Energy Services Network (RESNET)	☐
2505.09(c)(6)	Certified as an independent monitor under a renewable portfolio standard program in another state.	☒

	Useful Thermal Energy Independent Monitors	
2505.09(d)	*To qualify as an independent monitor who verifies **useful thermal energy production** please indicate which of the following apply to the applicant:*	
2505.09(d)(1)	A professional engineer licensed by the State of NH and in good standing.	☐
2505.09(d)(2)	***For verification of useful thermal energy from solar thermal sources***, a North American Board of Certified Energy Practitioners (NABCEP) Certified Solar Heating Installer	☐
2505.09(d)(3)	***For verification of useful thermal energy from geothermal sources*** an International Ground Source Heat Pump Association (IGSHPA) Accredited Geothermal Installer	☐

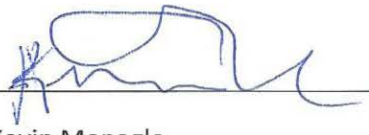
Provide your initials as an indication that you have read the following as it pertains to Independent Monitors and agree to uphold the rule.		**Initials**
2505.09(a)	An independent monitor shall verify the production of a customer-sited source or the production of useful thermal energy from an eligible source and report such production and REC calculations to the GIS. Such a customer-sited source or a source producing useful thermal energy shall either retain the services of an independent monitor directly or, if participating in aggregation pursuant to Puc 2506, through an aggregator.	**See Exhibit 2 – petition for waiver**
2505.09(b)	A distribution utility that is a distribution company shall be eligible to serve as an independent monitor for customer-sited sources and sources producing useful thermal energy within its service territory, provided that the distribution utility employs one or more persons to perform monitoring tasks who meet the qualifications specified in paragraph (c) or (d).	**Not applicable**
2505.09(g)	No customer-sited source or source producing useful thermal energy shall use an independent monitor: • who is a member of the immediate family of the owner of the source, or, • who holds a direct or indirect ownership interest in the source, or, • who sold or installed the equipment used by the source.	**See Exhibit 2 – petition for waiver**
2505.09(h)	The fact that a provider of electricity installed the customer-sited source or source producing useful thermal energy shall not be a disqualifying relationship.	
2505.09(i)	*The duties of the independent monitor shall be:*	**Initials**
2505.09(i)(1)	To perform an initial inspection of source's meter for accuracy and capability to measure the electricity or useful thermal energy produced, unless the meter is owned by a distribution utility that has already inspected it pursuant to Puc 305.	**See Exhibit 2 – petition for waiver**
2505.09(i)(2)	To measure quarterly the source's electricity or useful thermal energy production or displacement used to qualify for certificates pursuant to the GIS operating rules.	**KMM** KMM 3/7/2017
2505.09(i)(3)	To report the production of electricity or useful thermal energy from the source and the REC calculation to the customer and the GIS quarterly in accordance with the GIS operating rules.	**KMM** KMM 3/7/2017
2505.09(j)	An independent monitor shall not receive compensation for monitoring services that is a function of the number of certificates issued to any source using the independent monitor.	**KMM** KMM 3/7/2017
2505.09(k)	An independent monitor shall provide the commission with the notice prior to discontinuing services as a monitor.	**KMM** KMM 3/7/2017

Describe your rates for Renewable Energy Source Eligibility for Independent Monitoring (add lines as needed).

Description:	Unit	Rate
Quantitative Business Analytics, LLC provides REC Reporting/Independent Monitoring Services free of charge for clients that subscribe to one or more QBA analytical services. QBA provides monitoring for approximately 10,000 behind the meter and utility scale solar installations. QBA has been approved as a Data Acquisition Service Provider for reporting of Renewable Energy Certificates for the MassCEC PTS.		
	Per hour	$
	Flat fee	$
	Annual	$

AFFIDAVIT

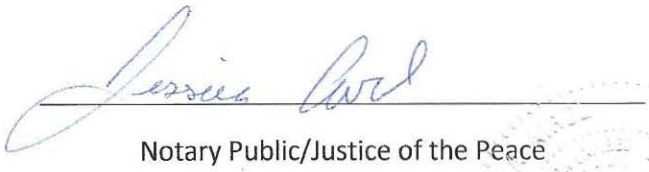
The undersigned applicant declares under penalty of perjury that contents of this application are accurate.

Applicant's Signature  Date 3/7/2017

Applicant's Typed Name Kevin Monagle

Subscribed and sworn before me this 7 Day of March (month) in the year 2017

County of Norfolk State of MA



Notary Public/Justice of the Peace

My Commission Expires 

JESSICA AIREL
Notary Public
Commonwealth of Massachusetts
My Commission Expires
August 28, 2020