

Turnkey Advanced Metering Infrastructure Solution Statement of Work

Virgin Islands Water and Power
Authority



Document Change Control

Version #	Implemented By	Revision Date	Comment
1.0	John O. Wambaugh	10/1/2024	Initial version

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Overview of Services

This Statement of Work ("SOW") defines the activities ("SERVICES") to be performed by **TBD** ("SUPPLIER") for Virgin Islands Water and Power Authority ("CUSTOMER" or "VIWAPA") for VIWAPA Turnkey AMI Solution ("PROJECT"). This SOW is entered into as of the last signature date below ("Effective Date"). SUPPLIER and VIWAPA are referred to as the "Party" or "Parties", as applicable. This document will describe agreed upon scope, services to be provided, deliverables, assumptions, responsibilities, timeline and completion criteria.

This SOW is issued in connection with the Master Purchase, License and Services Agreement, between the parties (the "Agreement"). Any purchase orders received and acknowledged by SUPPLIER against this mutually executed SOW is governed by the Agreement.

1. Project Objective

VIWAPA and SUPPLIER will implement the Turnkey Advanced Metering Infrastructure (AMI) (the System) in support of approximately 60,000 Endpoints. The System has extensive AMI capabilities with the Project focused on implementing a solution which meets all the business requirements as described Exhibit D (Business Requirements).

VIWAPA desires to implement a **turnkey** AMI solution which meets the following objectives. VIWAPA expects a single AMI vendor, with support from contractors hired and managed by the AMI vendor, to perform all these functions without VIWAPA personnel involvement.

- Replaces all the existing population of AMI electric meters (Approximately 54,000) with latest technology AMI meters communicating over an AMI communications network, or where required alternative communications, such as direct cellular, and provides automated meter reading at better accuracy and reliability than the existing AMI meter reading services. This replacement should be performed in the most economic fashion allowing VIWAPA to choose from a 12 month, 18 month or 24 month meter deployment. The complete installation of network and meters in U.S Virgin Islands (St. Thomas, St. Croix St. John and Water Island) will be completed by no later end of 2027.
- Provides automated billing (cycle as well as off cycle) of any installed AMI electric meter within 5 days of the meter installation or field retrofit.
- Provides remote connect or disconnect functionality of any installed AMI self-contained electric meter as soon as that AMI electric meter is installed.
- The solution meets all business requirements defined in the AMI Meter to Bill, AMI Connect and Disconnect, AMI Event Management and AMI Asset Management business processes.
- The AMI Solution (AMI Electric HES and AMI Network Devices) will be monitored, managed and operated by vendor personnel with cloud-based software technologies (AMI HES) and AMI network services and meet the data accuracy and reliability standards expected of the AMI solution. The SUPPLIER will provide any and all remote activities to monitor and troubleshoot deployed devices and VIWAPA will support field activities to replace non-functioning devices.
- Provides analytics and reporting to identify revenue protection opportunities and operational trends or issues.
- The solution provides a foundation for the future implementation of water AMI metering, streetlights, advanced analytics, distributed intelligence, distribution automation, and other services and capabilities.

1.1. Technologies and Partners

VIWAPA expects to use the following technologies and partners for the achievement of the above objectives:

- SUPPLIER AMI electric meters
- SUPPLIER AMI RF Network devices
- SUPPLIER AMI Head End System (HES) software and Analytics
- SUPPLIER Managed Services for AMI HES and Analytics software (QA and Production environments (with Disaster Recovery) required)
- SUPPLIER should be prepared to support Water Metering and Street Light Management at a future date.
- Meter Sense MDMS and integration
- Central Square CIS and integration
- SUPPLIER Professional Services, including project management, RF network design, information systems configuration and integration services
- SUPPLIER Installation Services, including Network Device installation services and electric meter installation field installation services.
- Z2Solutions AMI Program Management Services

1.2. Solution Components

1.2.1. AMI Electric Meters

VIWAPA will procure and **SUPPLIER** will install AMI Electric meters to replace the existing electric meters throughout the territory. VIWAPA expects that any AMI Electric meter will be successfully discovered by the AMI network and begin transmitting meter reading, power quality and alarm data with a minimum reliability of 90% within 24 hours of installation and fully validated and commissioned within 120 hours of installation.

The activities and responsibilities necessary to meet this expectation include:

- Establish asset management strategy and system of record, including warranty tracking and management (**VIWAPA** responsibility, with support from **Z2Solutions**)
- Definition of meter programs (configuration), labels, shipping requirements (**VIWAPA** responsibility, with support from **Z2Solutions** and **SUPPLIER**)
- AMI meter and tool training (**SUPPLIER** responsibility)
- Establish Factory Acceptance Test Plan (**VIWAPA** responsibility, with support from **Z2Solutions**)
- Produce AMI meters against the documented configuration specification (**SUPPLIER** responsibility)
- Validate and accept first article meters (**VIWAPA** responsibility, with support from **SUPPLIER** and **Z2Solutions**)
- Establish meter rollout schedule (**SUPPLIER** responsibility, with approval by **Z2Solutions**)
- Establish purchase order and delivery expectations for AMI electric meters (**VIWAPA** responsibility)
- Establish communication plan and material to be used for AMI meter rollout (**VIWAPA** responsibility, with support from **Z2Solutions**)

- Establish meter installation standards and rules of conduct for installers (**VIWAPA** responsibility, with support from **Z2Solutions**)
- Establish and conduct field maintenance processes for commissioned AMI electric meters (**VIWAPA** responsibility, with support by **Z2Solutions**)
- Build AMI test lab to support testing, FAT and ongoing firmware and configuration validations (**VIWAPA** responsibility, with support by **Z2Solutions**)
- Establish Incoming commodity testing process for incoming new AMI meters (**VIWAPA** responsibility, with support by **Z2Solutions**)
- Establish specific installation processes and handling for “special” customers (**VIWAPA** responsibility, with support by **Z2Solutions**)
- Establish Opt Out policy (**VIWAPA** responsibility, with support from **Z2Solutions**)
- Receive incoming AMI Electric Meters (**SUPPLIER** responsibility)
- Onboarding and training of installation contractors (**SUPPLIER** responsibility, with approval by **VIWAPA** and **Z2Solutions**)
- Training of VIWAPA metering personnel (**SUPPLIER** responsibility)
- Distribute and track AMI Electric Meters to installers (**SUPPLIER** responsibility)
- Provide population data as necessary for SUPPLIER to manage the AMI Electric Meter deployment (**VIWAPA** responsibility, with support from **Z2Solutions**)
- Create service orders in SUPPLIER Installation Management software (**SUPPLIER** responsibility)
 - NOTE: Dependency with software configuration and integration
- Install AMI Electric Meters (**SUPPLIER** responsibility)
 - NOTE: **SUPPLIER** will be responsible for installing all meters, except for those few meters mutually agreed as VIWAPA responsibility. If the installation of an AMI electric meter is prevented by a VIWAPA customer, VIWAPA will resolve the issue with the customer and the SUPPLIER will complete the installation.
- Validate all installation records and data prior to upload to CIS (**SUPPLIER** responsibility). VIWAPA expects less than 0.5% data exceptions resulting from incorrect installation records, including pictures.
- Identify and resolve installation issues and meters that can’t be installed as part of normal rollout (**SUPPLIER** responsibility, with support from **VIWAPA**)
- Provision and validate newly installed AMI meters (**SUPPLIER** responsibility working with Central Square).
 - NOTE: VIWAPA CIS will provide the provisioning (MeterAdd, MeterRemove, MeterUpdate, ServiceLocationChanged) notification to AMI HES based on the agreed upon integrations between CIS and AMI HES.
- Identify and resolve communications failures for any installed AMI Electric Meter which fails to achieve commissioning minimum performance within 10 business days (**SUPPLIER** responsibility)
- Establish and conduct monitoring processes for commissioned AMI electric meters and notification processes where field investigation or reporting is required (**SUPPLIER** responsibility, with approval by **VIWAPA** and **Z2Solutions**)

- NOTE: Until AMI electric meter becomes commissioned or optimized, **SUPPLIER** will be responsible for the monitoring and, if required, maintenance of the AMI Electric meter.
- Dispose of all removed electric meters (**SUPPLIER** responsibility)
- Manage RMA process until the completion of the Meter Deployment (**SUPPLIER** responsibility)

1.2.2. AMI Communications Network

VIWAPA will procure and **SUPPLIER** will receive, inspect, install and validate AMI RF Network devices to establish a communications umbrella to provide reliable communications to all of the installed AMI Electric Meters and, in the future, streetlights and AMI Water Meters. **VIWAPA** will use third party cellular networks or utility owned fiber to establish backhaul communications from the Network devices to the **SUPPLIER** NOC (Network Operations Center).

The activities necessary to meet this expectation include:

- Establish asset management strategy and system of record, including warranty tracking and management (**VIWAPA** responsibility, with support from **Z2Solutions**)
- Establish network monitoring and maintenance organization and roles/responsibilities (**SUPPLIER** responsibility)
- Network design (**SUPPLIER** responsibility, with **Z2Solutions** approval)
 - NOTE: **VIWAPA** will provide accurate GPS latitude and longitude information for at least 80% of the meters and **SUPPLIER** will establish and document “buffer stock” to accommodate the lack of detailed mapping information.
- Backhaul requirements and design (**SUPPLIER** responsibility, with support from **VIWAPA**)
- Network surveys based on the RFP network design and documentation of site requirements, including make ready work and mounting brackets (**SUPPLIER** responsibility)
- Network equipment order, including antenna and brackets (**VIWAPA** responsibility, based on **SUPPLIER** surveys)
- Network equipment receipt and inspection (**SUPPLIER** responsibility)
- Network equipment training (**SUPPLIER** responsibility)
- Pole replacement/installation as necessary for network equipment (**VIWAPA** responsibility, based on **SUPPLIER** surveys)
- Make ready work, including installation of mounting arms, prior to collector/router installation (**SUPPLIER** responsibility)
- Network equipment and antenna installation, including power connection (**SUPPLIER** responsibility)
- Network equipment validation and commissioning, including commissioning of backhaul (**SUPPLIER** responsibility)
- Establish back office maintenance and monitoring processes for Network equipment (**SUPPLIER** responsibility)
- Establish field maintenance and troubleshooting processes for Network equipment and provide training for **VIWAPA** (**SUPPLIER** responsibility, with support from **VIWAPA** and **Z2Solutions**)

1.2.3. AMI HeadEnd System Configuration and Integration

VIWAPA will procure, via cloud-based services, and configure, via **SUPPLIER** setup and configuration services, the **SUPPLIER** AMI HES Platform to manage the automated discovery, commissioning, monitoring, communication, data collection, firmware management and control from all AMI endpoints (AMI Network Devices and AMI Electric Meters. VIWAPA will use the hosted AMI HES to commission and monitor all AMI meters and perform all of the over the air maintenance and monitoring activities to ensure the communications network is operating at optimum performance and failed devices are identified in a timely fashion. It is expected that the **SUPPLIER** will lead and document any workshops and design discussions necessary to establish the configurations of the AMI HES and the integrations (CIS-AMI HES, MDMS-AMI HES, CIS-Installation Management System, GIS-AMI HES (if required), etc.). It is expected that the **SUPPLIER** will establish an integration which does not require any customization by the Central Square CIS (To be clear, the Central Square CIS utilizes batch file integrations and the **SUPPLIER** will establish any translation and conversion necessary to adapt these files to the AMI HES standard interfaces).

SUPPLIER will integrate with the MeterSense MDMS and Central Square CIS to meet all of the business requirements for the AMI solution as documented in VIWAPA's business requirements.

The activities necessary to meet this expectation include:

- Establish AMI business processes (**VIWAPA** responsibility, with support from **Z2Solutions**)
- Establish AMI business requirements which will define the configurations and functionality required from AMI Network Solution (**Z2Solutions** responsibility, with support from **VIWAPA**)
- Establish, document and maintain the AMI solution and integration architecture (**Z2Solutions** responsibility, based on input from **SUPPLIER**, **Meter Sense** and **Central Square**)
- Establish AMI Operations organization and roles/responsibilities (**VIWAPA** responsibility, with support from **SUPPLIER**)
 - NOTE: VIWAPA's AMI Operations organization will be responsible for the MDMS and using the AMI HES for data analytics and data monitoring. **SUPPLIER** will be responsible for operating and maintaining the AMI HES and any related systems and monitoring all the endpoints and alerting **VIWAPA** for any endpoints which require field investigation or replacement.
- Define and document AMI HES configurations (**SUPPLIER** responsibility with **Z2Solutions** review/approval)
- Define and document AMI HES integrations with MeterSense MDMS (**SUPPLIER** responsibility with support from **Meter Sense** and **VIWAPA** and **Z2Solutions** review/approval)
- Define and document AMI HES integrations with Central Square (**SUPPLIER** responsibility with support from **Central Square** and **VIWAPA** and **Z2Solutions** review/approval)
- Define and document **SUPPLIER** Installation Management System integrations with Central Square (**SUPPLIER** responsibility with support from **Central Square** and **VIWAPA** and **Z2Solutions** review/approval)
- Backhaul requirements and design, including security (**SUPPLIER** responsibility, with support from **VIWAPA**)
- Document/Design, build and unit test CIS-side/MDMS-side integrations (**Central Square** and **MeterSense** responsibility, with approval by **Z2Solutions**)

- Document/Design, build and unit test AMI HES/MDMS and AMI HES/CIS integrations (**SUPPLIER** responsibility, with approval by **Z2Solutions**)
- Document/Design, build and unit test Installation Management System/CIS integrations (**SUPPLIER** responsibility, with approval by **Z2Solutions**)
- Document/Design, configure and unit test AMI HES (**SUPPLIER** responsibility, with approval by **Z2Solutions**)
- AMI HES Operations Training and documentation (**SUPPLIER** responsibility)
- Provide detailed AMI HES operational processes, checklists, escalation policies, etc. with assignment of roles for each (**SUPPLIER** responsibility, with support from **VIWAPA** and **Z2Solutions**)
- Provide detailed AMI HES systems maintenance processes, checklists, escalation policies, etc. (**SUPPLIER** responsibility)
- Establish MDMS Operational processes, checklists, escalation policies, etc. (**VIWAPA** responsibility, with support from **Z2Solutions** and **MeterSense**)
- Establish MDMS Maintenance processes, checklists, etc. (**MeterSense** responsibility, with support from **VIWAPA** and **Z2Solutions**)
- Provide AMI HES validation and acceptance test plan which validates AMI HES configuration meets VIWAPA AMI Business Requirements (**SUPPLIER** responsibility, with **Z2Solutions** review, enhancement and approval)
 - NOTE: **SUPPLIER** is responsible for the planning, test script development, data creation, and test execution for system testing of the AMI HES and capturing the results and completing the system test report for these systems. **VIWAPA** may participate in the testing by shadowing the testers. Testing must be complete and include identification and documentation of all exception conditions that may occur.
 - NOTE: **SUPPLIER**, with support from **MeterSense** and **Central Square**, is responsible for the planning and scheduling, test script development, data creation and test execution (with support from **MeterSense** and **Central Square**) for integration testing of the AMI HES with MDMS and CIS and capturing the results and completing the integration test report for these integrations. **VIWAPA** may participate in the testing by shadowing the testers. Testing must be complete and include identification and documentation of all exception conditions that may occur.
 - NOTE: **Z2Solutions** and **VIWAPA**, with support from **SUPPLIER**, **MeterSense** and **Central Square**, are responsible for the planning and test script development and data creation (data creation will utilize the **SUPPLIER** test simulation capabilities and the AMI Test Lab and **SUPPLIER** Installation Management System simulation capabilities, which will be managed by the **SUPPLIER**) for the User Acceptance Testing of the integrated solution.
- Establish Systems Integration test plan and roles/responsibilities (**SUPPLIER** responsibility, with support from **Z2Solutions**, **MeterSense** and **Central Square**)
- Unit Test AMI HES to validate configurations and internal functionality to demonstrate compliance with configuration workbook and business requirements. Provide the Unit Test Plan for review prior to start of unit testing and provide a Unit Test Report following the completion of Unit Testing. (**SUPPLIER** responsibility, with approval by **Z2Solutions**)

- Test and validate integrated AMI solution to validate the integrations and end-to-end functionality of the integrated solution and compliance with business requirements. Develop all test scripts, execute all test scripts and provide a Systems Integration Report upon completion of testing (**SUPPLIER, Central Square and MeterSense** responsibility with support from **VIWAPA** and approval by **Z2Solutions**)
 - NOTE: **SUPPLIER** has overall responsibility for Systems Integration Testing and **VIWAPA** will be responsible for User Acceptance Testing. Responsibility includes creation of test plans and test scripts, creation of test data, execution and recording of test scripts and test reporting.
- Establish User Acceptance test plan and roles/responsibilities (**Z2Solutions** responsibility, with support from **SUPPLIER, MeterSense** and **Central Square**)
- Conduct and document User Acceptance testing (**VIWAPA** responsibility, with support from **SUPPLIER, MeterSense** and **Central Square**).
- Document integration monitoring procedures and roles/responsibility, including escalation procedures (**VIWAPA** and **SUPPLIER** joint responsibility)
- Provide training of testing personnel for AMI HES system and Integration testing (**SUPPLIER** responsibility)
- AMI HES end user training (**SUPPLIER** responsibility)
- AMI HES setup and configuration acceptance (**VIWAPA** responsibility)
- Managed Services, including SaaS, operations and administration of AMI HES (**SUPPLIER NOC (Network Operating Center)** responsibility)
- Disaster Recovery Testing of the AMI HES (**SUPPLIER** Responsibility)

1.2.4. Acceptance Testing

Upon the successful setup, configuration and integration of the AMI systems, Z2Solutions will validate the deployed AMI solution, inclusive of AMI network and AMI meters, is meeting the business requirements and performance expectations through a set of Acceptance Tests. VIWAPA expects acceptance testing to be performed on the production systems with current customers and will conduct testing in a careful way to ensure that customers are minimally impacted by the deployment of the AMI solution, the transition of customers to the new meter reading and billing solution and these acceptance testing activities. Prior to Acceptance Testing, VIWAPA, with its partners, will have completed the installation and commissioning of the AMI Communications Network, the AMI Network Management hosted solution and will have completed the systems integration and testing of these systems.

As part of Acceptance Testing, VIWAPA will validate the performance of the system is able to meet the following:

- 99.5% of intervals and registers from the previous day collected and available in the MDMS, or other utility systems by 6:00 AM next day
- 99% on-demand read successfully executed within 60 seconds
- 99% connect or disconnect operations successfully executed within 30 seconds

VIWAPA will conduct the following graduated acceptance tests:

Initial deployment test: VIWAPA (using SUPPLIER installation services) will install approximately 1,000 AMI electric meters on the island of St. John. This testing will validate the installation and commissioning processes for AMI meters and all of the functionality of the AMI solution. This testing will also validate the ability of the solution to meet the installation and commissioning performance metrics. This testing will also validate the ability to accurately and reliably bill for all installed AMI electric meters.

Final acceptance test: Final acceptance test: **VIWAPA** (using **AMI Vendor** installation services) will install, provision and commission the remainder of the AMI meters the service territory. This testing will validate the ability of AMI Vendor to meet overall system operational performance metrics. This testing will also provide an assessment of the project's ability to meet the objectives established in Section 1. This testing should also include an assessment by **AMI Vendor** of the AMI Operations and AMI Communications Network, including system tuning. This testing should be performed over a 30 day period after any system tuning and demonstrate the data collection and delivery performance and system responsiveness. The successful completion of this test will be a final milestone and allow payment of all retained invoices.

Upon the successful setup, configuration and integration of the AMI systems and the installation of the AMI network and endpoints, VIWAPA will validate the deployed AMI solution, inclusive of AMI network and AMI meters, is meeting the business requirements and performance expectations through a set of Acceptance Tests. VIWAPA expects acceptance testing to be performed on the production systems with current customers and will conduct testing in a careful way to ensure that customers are minimally impacted by the deployment of the AMI solution, the transition of customers to the new meter reading and billing solution and these acceptance testing activities. Prior to Acceptance Testing, VIWAPA, with its partners, will have completed the installation and commissioning of the AMI Communications Network, the AMI HES/MDMS hosted solution and will have completed the systems integration and testing of these systems.

2. Project Scope

2.1. SUPPLIER System Components

This section outlines the System components to be delivered to the CUSTOMER.

System	Scope Included:
AMI HES	<input checked="" type="checkbox"/> <AMI HES Components> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <AMI Security Components> <input checked="" type="checkbox"/> <AMI Field Tools>
Installation Management System	<input checked="" type="checkbox"/> <IMS Modules/Components>
Other	<input checked="" type="checkbox"/> Systems Integration <input checked="" type="checkbox"/> Network Design and Installation <input checked="" type="checkbox"/> Meter Installation <input checked="" type="checkbox"/> Acceptance Testing

2.2. SUPPLIER Services

This section lists the services SUPPLIER will perform/support under this SOW. These services are further described within this SOW.

- ☒ Project Management
- ☒ Initial and “As Built” Network Design
- ☒ Network and Endpoint Installation Management
- ☒ System Requirement Gathering/Verification & Design (Business, Technical, Data Migration, Integration)
- ☒ System Software Installation, Configuration & Functional/Integration Testing
- ☒ Lead and support VIWAPA with Interface development and documentation
- ☒ Support VIWAPA User Acceptance and System Testing
- ☒ Workshops, Documentation & Training

2.3. Environments

The following environments will be available and maintained throughout the duration of the Project, and the term for Managed Services. The responsibilities for aspects related to these environments are identified below:

Environments	SUPPLIER Responsibilities	CUSTOMER Responsibilities
Production including Disaster Recovery	Description: This is the target environment where the full business System will be implemented and utilized by the VIWAPA end users. Once the VIWAPA is “live” and their end users are utilizing the System, it is often referred to as “in Production”.	
	<ul style="list-style-type: none"> • Setup and configure SaaS configuration of System as outlined in the Architecture Document • Document the Production Environment in the Architecture Document • Technical support for integration requirements between SUPPLIER components • Perform Functional and Integration Testing • Technical support for cutover to production use 	<ul style="list-style-type: none"> • Perform other Testing requirements (FAT, UAT, System Acceptance, etc.) • Cutover to Production • Manage change control of environment.
Environments	SUPPLIER Responsibilities	CUSTOMER Responsibilities
Test	Description: This is the target environment where smaller scale test cases will be tested and analyzed by the VIWAPA prior to implementation in Production.	
	<ul style="list-style-type: none"> • Setup and configure SaaS configuration of System as 	<ul style="list-style-type: none"> • Perform other Testing requirements (FAT, UAT, System Acceptance, etc.)

Environments	SUPPLIER Responsibilities	CUSTOMER Responsibilities
	<p>outlined in the Architecture Document</p> <ul style="list-style-type: none"> Document the Test Environment in the Architecture Technical support for integration requirements between SUPPLIER components Perform Functional & Integration Testing 	<ul style="list-style-type: none"> Manage change control of environment.

2.4. Summary of Key Document Deliverables

This list summarizes all Project Key Document deliverables that require a sign-off by VIWAPA. For a comprehensive list of all deliverables, refer to the Activities and Deliverables section.

2.4.1. Comments & Clarifications

- These key deliverables require sign-off within ten (10) business days of receipt. Failure to authorize in this timeframe or to reject the deliverable in writing will be considered deliverable acceptance.
- Modifications or updates to the deliverables previously accepted by CUSTOMER and SUPPLIER will be handled through the Change Control Process described in this SOW.

2.4.2. Key Deliverables

#	Key Deliverable Requiring Sign-Off	Description
1	Business Requirements Document (BRD)	<p>This document outlines all System requirements that will be met by the SUPPLIER System design. It also highlights requirements, should any be identified in the associated workshops/design reviews. This document maps the requirements to the functional design of the System. The BSD also includes core (high level) business operating procedures to address the approach the Project Team will use to integrate the System functionality into the VIWAPA's business practices.</p> <p>The BRD will incorporate all VIWAPA AMI business requirements and technical specifications as outlined in Exhibit D and VIWAPA AMI Business Process Models (BPM).</p>
2	Gap Analysis Document	<p>This document outlines any gaps identified between the BRD and VIWAPA AMI business requirements and technical specifications as outlined in Exhibit D and VIWAPA AMI Business Process Models (BPM). This document includes recommendations for eliminating or minimizing the each identified gap.</p>

#	Key Deliverable Requiring Sign-Off	Description
3	Architecture Design (AD)	This document includes: server sizing, environments and the specifications for each; security; long-term backup; and recovery requirements of the system. Although, SUPPLIER will be providing SaaS and Managed Services, this deliverable is required for verification.
4	Technical Integration Document (TID)	This document identifies the required integrations (interfaces & data migration) between SUPPLIER and CUSTOMER systems (or 3rd party) as well as integrations between SUPPLIER systems that must be developed, implemented and tested to meet the requirements in the BRD. It outlines the interface and data migration design details including the data map, design assumptions, maintenance and testing requirements.
5a 5b	Initial Network Design Final Network Design	This Network Design deliverable validates the Network Design and key assumptions with technical teams. The Network Design document incorporates Network Device locations, installation guidelines, and coverage and capacity assumptions. It will include site selection and make-ready assessments. The Final Network Design will include all surveys and installation documentation for each network device.
6a 6b	Configuration Workbook (CWB) As built CWB	The CWB contains descriptions, possible/range of values, impacts and functional/system location of the configuration settings within applications.
7	Integration Architecture	The Integration Architecture deliverables document the end to end integration, including source, target, pattern, security, integration method, frequency, size, detailed documentation, etc. for each interface.
8	Project Completion Form	This document lists all of the completion criteria and is used as a checklist to validate the project is officially completed.
9a 9b 9c	Test Strategy SIT Test Plan UAT Test Plan	Document that describes the phases of testing for the Project, test objectives for each phase, test entry criteria, test phase exit criteria, and test cases. CUSTOMER resources will have input into the Test Plan that SUPPLIER will develop with input from CUSTOMER. The Test Plan describes all phases of testing for the Project including test objectives, test entry criteria, test phase exit criteria, and test cases for First Article, Functional, Integration, User Acceptance, and System Acceptance Testing. The Test Plan includes all test scenarios, including happy path and exception scenarios.

#	Key Deliverable Requiring Sign-Off	Description
10	Training Plan	A single document that includes details on the following trainings: meter programming training, meter maintenance training, meter troubleshooting (field and meter shop) training, network device installation training, network device troubleshooting and maintenance training, AMI HES training, Field Tool training, etc.

2.5. Key Assumptions

- a) SUPPLIER will maintain ownership and responsibility for all equipment, until such equipment has been installed, upon which time CUSTOMER will take ownership and responsibility.
- b) SUPPLIER will provide complete integration services between AMI HES and CIS whereas CUSTOMER will be responsible for all other integrations using generally available standard format from CIS.
- c) SUPPLIER will provide complete integration services between AMI HES and MDMS whereas CUSTOMER will be responsible for all other integrations using generally available standard format from MDMS.
- d) SUPPLIER will utilize MDMS and CIS standard application programming interfaces (API) wherever possible and configure SUPPLIER HES interfaces to be compatible with these APIs.
- e) SUPPLIER and CUSTOMER will each dedicate proper resources to complete the project tasks outlined in this document, including a project lead.
- f) Specific roles and responsibilities for both parties will be mutually reviewed and confirmed and/or assigned or modified.
- g) SUPPLIER will provide standard integration specifications and any test data sets required by CUSTOMER
- h) Product customizations not required to meet VIWAPA's business and technical requirements and that require additional or separate work efforts by SUPPLIER will be scoped and estimated once they are documented, reviewed, and approved.
- i) Product customization that is required to meet VIWAPA's business requirements will be performed by SUPPLIER at no additional cost and covered under this statement of work.
- j) SUPPLIER will provide all necessary 3rd-party software licenses and versions necessary to operate the AMI HES.
- k) CUSTOMER will provide SUPPLIER all necessary access to systems and accounts for the work described in this document to be accomplished.
- l) CUSTOMER is responsible for any necessary modifications to its systems and or interfaces integrating with SUPPLIER systems.
- m) SUPPLIER is responsible for any necessary modifications to its systems and or interfaces originating from SUPPLIER systems to integrate with CUSTOMER's CIS system.
- n) CUSTOMER will provide their own field laptops or tablets to install SUPPLIER field tools applications.
- o) CUSTOMER will provide connection/communication from field network devices to servers.
- p) SUPPLIER will review and certify the connection/communication from field network devices to servers.
- q) SUPPLIER schedule is dependent upon CUSTOMER resource availability/schedule, and any hardware lead times
- r) Network Design

1. VIWAPA represents and warrants that VIWAPA has provided, to the best of its ability, to SUPPLIER the accurate locations of the locations of the electric meters (“VIWAPA Device Locations”).
 2. SUPPLIER used the VIWAPA Device Locations in the Initial Network Design and confirms that the all meters are covered within the AMI Network.
 3. SUPPLIER has developed a design and has provided a map (“Initial Network Design Coverage Area”) of the Initial Network Design coverage supporting the locations of the electric meters.
 4. SUPPLIER represents that it also has enough network capacity built into the network to support up to 60,000 electric meters (as well as an additional TBD,000 water meters and TBD,000 streetlights) referred to as the “Total VIWAPA Population” assuming that any additional electric meters (“Not Provided Locations”) are within the coverage area of the “Initial Network Design” i.e. latitude and longitude coordinate pairs within this Initial Network Design Coverage Area, regardless of the physical installation location (e.g. inside, outside, etc.), and upon completion of the system acceptance test, will have an average daily communication performance of 99.5% or better and a minimum daily communication performance for any meter of 95% (collectively, the “Performance Requirements”). SUPPLIER warrants that the Total VIWAPA Population is included in the Initial Network Design Coverage Area.
 5. SUPPLIER agrees that the Final Network Design of surveyed and installed Network Devices will provide the necessary RF communications to meet the Performance Requirements for the Total VIWAPA Population. Provided that any electric meter strictly within the boundaries of the Initial Network Design Coverage Area, SUPPLIER warrants that the Final Network Design will meet the Performance Requirements for the Total VIWAPA Population proposed for the AMI solution. If additional Network Devices or Remote Antenna are required to meet the Performance Requirements during the deployment period, VIWAPA will purchase and pay SUPPLIER to install such Network Devices or Remote Antenna, up to 5% of the total cost of the Network Equipment and SUPPLIER will provide and install the remainder of the devices at no charge to VIWAPA. This 5% limit shall be calculated per device type. SUPPLIER shall provide all survey services for additional devices at no charge inclusive of the 5%.
- s) CUSTOMER will provide locations of all Endpoints for network coverage in VIWAPA service territory, however SUPPLIER acknowledges that 100% locations is not possible and the data will be at least 90% accurate.

2.6. Critical Success Factors

Critical success factors for the fully integrated AMI implementation are listed below to ensure expectations are managed properly between CUSTOMER and SUPPLIER and the implementation project is successful.

- SUPPLIER is responsible for the timely delivery of all equipment.
 - <Insert agreed terms for Meter Delivery and Network Device Delivery warranty>
- SUPPLIER is responsible for the full deployment and commissioning of all network devices to meet coverage and SLA performance.
 - <Insert agreed terms for No Meter Left Behind>
- SUPPLIER will provide assurances against excessive failure of all equipment

○ <Insert agreed terms for Excessive Failure>

- SUPPLIER is responsible for the full deployment and communications validation of all meters. This includes daily reporting of installed meters to the CIS.
- SUPPLIER is responsible for remediation of all meter communications issues during initial and mass deployment.
- SUPPLIER is responsible for the removal and recycling of the removed meters.
- SUPPLIER is responsible for the configuration, delivery, testing, documentation and training of AMI HES. SUPPLIER will be installing and enabling (moving to production mode) a complete configured and tested AMI HES system in its SaaS NOC.
- SUPPLIER is responsible for the delivery, testing, documentation, training and configuration of all interfaces between AMI HES and MDMS. CUSTOMER is responsible for the delivery, testing, documentation, training and configuration of all interfaces between CUSTOMER systems and MDMS.
- SUPPLIER and CUSTOMER will commit to concrete deliverables for each phase of this implementation.
- CUSTOMER will be responsible for performing user acceptance testing after all of the above have been delivered. CUSTOMER will accept the configured, integrated and documented system after successful completion of the System Acceptance Test.
- SUPPLIER will complete the implementation of the project and achieve acceptance of the project by December 31, 2027.

2.7. Out of Scope Items

The following items are excluded from this project

- a) Organizational Change Management (OCM) - Implementing an OCM plan is considered out of scope for SUPPLIER as part of this SOW
- b) Business Process Design- documenting as-is and to-be business processes. SUPPLIER acknowledges that if CUSTOMER completes its Business Process Design prior to the start of the requirements workshops, then SUPPLIER will design and configure the systems to meet this Business Process Design and business requirements. CUSTOMER will then be responsible for updating any business processes based on any changes driven by the newly introduced SUPPLIER system solution.

3. Project Roles and Responsibilities

3.1. Overview

In this Statement of Work, SUPPLIER has indicated in general which party (SUPPLIER or CUSTOMER) is responsible for various tasks throughout this project plan. The intention is that the project is a highly collaborative effort; however specific deliverables are the responsibility of one party. In all cases, it is expected that the responsible party will be able to count on the reasonable support and assistance of the other party to help achieve each deliverable. Detailed roles and responsibilities will be defined, and a responsibility matrix will be a deliverable result of the Planning and Analysis stage.

The assigned SUPPLIER Project Manager will actively participate in all stages of the project and will be the point of escalation for any issues requiring escalation. Other SUPPLIER subject matter experts will also be called upon to participate periodically in various stages of the project. These roles are not called out specifically in the stages below; however, they are implied throughout and have been considered in

resource plans. Weekly status updates which summarize progress, plans, and challenges will be provided by the SUPPLIER Project Manager throughout the project.

The Project Plan and Schedule will be initialized in the Preparation and Planning stage; refined and finalized at the end the Analysis stage; and then become working project documents that are updated and managed by the SUPPLIER Project Manager with input and review from the CUSTOMER Program Manager and input from any other designated third-party participants in the overall Project.

SUPPLIER will conduct workshops and document the configuration of the AMI HES as well as the end to end integration architecture. SUPPLIER will support CUSTOMER in their creation of the utility side of the integration points to the AMI HES. SUPPLIER will support, assist, and consult with CUSTOMER regarding the integration of the AMI HES with other utility systems. Key SUPPLIER personnel will ensure that the planning, analysis, design, development and testing of each interface take into account the core AMI HES capabilities and CUSTOMER business processes. SUPPLIER will lead the overall integration effort and SUPPLIER will be solely responsible for integration between their systems (AMI HES and Installation Management System). SUPPLIER will conduct all systems integration testing and support CUSTOMER as they conduct User Acceptance Testing. SUPPLIER will provide all test scripts for all test phases.

3.2. RACI Matrix

The high-level tasks and associated RACI described below identify the major work efforts for the project deliverables. SUPPLIER uses this RACI matrix to clearly indicate project responsibilities through the duration of the project. Delays by CUSTOMER on tasks assigned as 'Responsible' may cause additional unbudgeted work by SUPPLIER staff. Please note the definitions of the terms comprising RACI are:

- (R) Responsible - Those who do the work to achieve the task.
- (A) Accountable - The one ultimately answerable for the correct and thorough completion of the deliverable or task, and the one who delegates the work to those responsible. must be only one accountable specified for each task or deliverable.
- (C) Consulted - Those whose opinions are sought, typically subject matter experts; and with whom there is two-way communication
- (I) Informed -Those who are kept up-to-date on progress, often only on completion of the task or deliverable; and with whom there is just one-way communication.

Item	SUPPLIER	CUSTOMER	Notes
Project and Solutions Activities			
Overall solution project management	A, R	C	SUPPLIER will manage the overall project reporting to CUSTOMER's Program Management Office

Item	SUPPLIER	CUSTOMER	Notes
Plan and conduct joint project kickoff	A, R*	R*	*Joint responsibility for each entity; SUPPLIER has overall ownership
Plan and conduct planning workshops (SUPPLIER related)	A, R	C	Product and integration related workshops
Build and maintain project management plans (quality, change, risk, communication)	A, R	R	CUSTOMER to support SUPPLIER
Review infrastructure requirements	A, R	C	
Document business process flows (to-be)	C	A, R	
Capture, document, and track requirements from planning to deployment (SUPPLIER product related)	A, R	C	
Capture, document, and track requirements from planning to deployment (Business related)	C	A, R	
Updates AMI HES configuration worksheets	A, R	I	
Develop and maintain overall project schedule	A, R	C, I*	*Consulted in the development, Informed during maintenance
Maintain SUPPLIER activities within overall project schedule	A, R	I	
Develop overall integration architecture	A, R	R, C	VIWAPA will ensure that MeterSense and CentralSquare provide technical input to this architecture.
Develop SUPPLIER component integration plans	A, R	C	

Item	SUPPLIER	CUSTOMER	Notes
Provide standard interface specifications and test data	A, R	I	Sync, On demand engine, billing export, etc. (All API's).
Approve all plans and schedules	C	A, R	
Provide written material forecasts	A, R	C	
Provide Formal classroom training and documentation in meter programming software	A, R	C	CUSTOMER to attend training
Provide formal classroom AMI HES, Network Deployment, and meter deployment training and training material	A, R	C	CUSTOMER to attend training
Provide online training in security and other topics	A, R	C	Client is provided online training credits towards any online training course
Software Installation and Configuration Activities			
Provide hardware/network infrastructure specifications	A, R	I	
Provide hardware/network infrastructure for SUPPLIER hosting AMI HES, including all applicable environments (Development and Production)	A, R	I	
Validate hardware/network infrastructure installation and configuration	A, R	C	This is applicable to the hardware that is commissioned by SUPPLIER.
Forecast and capacity planning activities	A, R	R	
Provide licensing specification for 3 rd party software needed to operate AMI HES	A, R	I	
Acquire and install 3rd party software and licenses as necessary to operate AMI HES	A, R	I	

Item	SUPPLIER	CUSTOMER	Notes
Validate 3 rd party software installation and configuration meets AMI HES requirements	A, R	C	
Provide procedures for AMI HES Backup and Maintenance Activities.	A, R	I	
Provide backup, redundancy, availability, maintenance, and administration of all AMI HES environments	A, R	I	
Complete AMI HES installation	A, R	I	
Complete AMI HES configuration	A, R	I	
Complete Field Tool software installation	C	A, R	
Complete Installation Management System software installation	A, R	I	
Provide Unit and System testing, including unit and system test report, of AMI HES configuration	A, R	C	
Software Integration Activities			
Complete CUSTOMER-Side Integration between AMI HES and CUSTOMER CIS and MDMS (Sync, On demand engine, Billing extract, service orders, etc.)	C	A, R	Based upon documented SUPPLIER design
Complete SUPPLIER-side Integration between SUPPLIER AMI HES head end system and MDMS (reads, events, commands, provisioning)	A, R	I	
SUPPLIER will provide all test data as required to validate integration between AMI HES and MDMS, functionality and configuration of AMI HES.	A, R	C	
Test data flow between each integration point	R	A, R	
Hardware Installation and Configuration Activities			

Item	SUPPLIER	CUSTOMER	Notes
Create electric meter programs and complete FAT worksheet	A, R	C	CUSTOMER provides required data to SUPPLIER
Provide all available Endpoint coordinates and asset information to SUPPLIER	I	A, R	
Provide design and infrastructure spreadsheet	A, R	C	
Conduct and report initial FAT review of meters	A, R	I	
Conduct testing of FAT meters and approve for production	C	A, R	
Complete Corrections of Failures resulting from FAT Testing	A, R	C	
Conduct site surveys for all Network Devices and fully document the survey results.	A, R	C	
Develop final design based on site surveys	A, R	C	Changes to be reviewed and accepted with all parties.
Order additional hardware as needed based on final design	I	A, R	Subject to 5% Clause and Data Accuracy Clause
Provide backhaul to all Network Devices	A, R	C	
Establish commissioning and acceptance procedures, and documentation, for installed network devices	A, R	C	CUSTOMER will review and accept these procedures
Install network devices	A, R	C	
Conduct and document RF Network Commissioning for all Network Devices	A, R	C	
Automatically, Create/Import Meter Provisioning data	A, R	I	
Testing Activities			

Item	SUPPLIER	CUSTOMER	Notes
Develop Overall Test Management Strategy	A, R	C	
Develop use cases/test cases for AMI HES configurations and functionality and all integrations	A, R	I	
Develop use cases/test cases (including any CUSTOMER test data) for User Acceptance Testing	A, R	R	SUPPLIER can support CUSTOMER in development - SUPPLIER to provide CUSTOMER with standard test cases
Perform initial system validation	A, R	C	
Perform and document initial SUPPLIER to SUPPLIER systems integration testing	A, R	C	
Perform and document initial AMI HES configuration and functional testing	A, R	C	
Perform overall end to end systems integration testing	A, R	C	
Perform user acceptance testing	C	A, R	
Resolve system defects related to AMI HES	A, R	C	
Provide system acceptance approval/sign-off	I	A, R	
Production Cutover/Stabilization Activities			
Provide subsequent training or any trickle-down training/knowledge transfer	I	A, R	
Provide standard AMI HES Operations Guide	A, R	I	
Customize and expand AMI HES Operations Guide	A, R	C	Specific to CUSTOMER Operations procedures

Item	SUPPLIER	CUSTOMER	Notes
Provide “as built” configuration workbooks, Administrations and Operations Guide for AMI HES	A, R	I	
Develop migration/go-live plan	A, R	R	
Execute migration/go-live plan	A, R	R	
Provide post-go live support for up to 90 days	A, R	R	CUSTOMER is responsible for issues related to data quality, unless such data quality is due to SUPPLIER meters, network, AMI HES.
Transition CUSTOMER to SUPPLIER application Support teams	A, R	I	
Conduct project lessons learned	A, R	R	Joint responsibility
Provide overall project completion approval	I	A, R	
Endpoint Deployment			
Establish commissioning and acceptance procedures, and documentation, for endpoints	A, R	C	CUSTOMER will review and accept these procedures
Develop Endpoint deployment plan based in Customer timeline and area priorities	A, R	I	
Establish warehouse and cross dock capabilities for Endpoint deployment	A, R	I	
Establish sub-contract and manage endpoint deployment sub-contractor	A, R	I	
Execute Endpoint deployment plan while providing daily updates, reports and exchange files as required.	A, R	I	

Item	SUPPLIER	CUSTOMER	Notes
Ensure all Endpoints are “Normal” and communicating with a minimum acceptable performance in AMI HES (Endpoint Commissioning) within the SLA and No Meter Left Behind terms.	A, R	C	SUPPLIER will provide hands on training and documentation to CUSTOMER to ensure meter registration goes from “installation” status to “normal” status.
Create/Import MMF files into AMI HES	A, R	C	SUPPLIER to create MMF files as part of the manufacturer and delivery of the endpoints. SUPPLIER to import MMF file into AMI HES.
Remediate endpoint communications problems	A, R	I	
Disposal of removed meters in an environmentally responsible manner with shared compensations	A, R	I	
Identify RTU (Return to Utility) endpoints, including reason for RTU	A, R	C	
Install RTU endpoints	C	A, R	
Document and report completed deployment and commissioning for all meters in Meter Routes	A, R	I	Any Meter Route must have 100% completed installations within 60 days of the start of deployment
Manage customer claims	A, R	C	

3.3. Resource Types

The following table outlines the expected resource requirements for SUPPLIER and CUSTOMER by resource type:

Resource Type	Responsibilities	Abbreviation
SUPPLIER		
Program Manager	<p>Project sponsorship at executive level</p> <p>Responsible for overall executive communications</p> <p>Attends VIWAPA specific executive meetings</p> <p>Point of escalation for issue/risk resolution</p> <p>Overall Project accountability</p> <p>Responsible for Project strategy, planning, staffing and financials</p> <p>Supports SUPPLIER Project Manager, with internal activity requirements</p>	PgM
Project Manager	<p>Leads and manages projects for specific components of the overall solution.</p> <p>Responsible for overall onsite SUPPLIER Project delivery management as it relates to the SUPPLIER deliverables and responsibilities described in the SOW including:</p> <ul style="list-style-type: none"> • Manages and schedules SUPPLIER Project resources • Secures SUPPLIER resources for work • Manages scope and Project planning • Manages Project financials • Manages the SUPPLIER Project schedule • Manages Project reporting (as agreed by both Parties in the Charter & Governance Plan) <p>Manages issues and risks</p> <p>Manages the Change Order Process</p> <p>Manages the contract/SOW</p> <p>Manages SUPPLIER internal management tasks and reporting</p>	PM
Technical Implementation Manager	Accountable for end-to-end implementation of technical solutions to meet CUSTOMER	TIM

Resource Type	Responsibilities	Abbreviation
	requirements as well as consulting on technical domains including security	
Business and Integration Analyst	Leads detailed integration requirements session, provides standard APIs and specifications (SDK's), provides best practices, and supports CUSTOMER integration activities to facilitate integration with CUSTOMER systems	BIA
Technical Architect	<p>Provides design and system architecture recommendations for SUPPLIER systems, including server sizing, configuration, data flow needs, etc. Review & approve CUSTOMER's proposed system hardware and Operating Systems plan. Support CUSTOMER installation & configuration of SUPPLIER software</p> <p>Provides guidance for implementing all interconnected systems and the data flows between each system, including source, target, frequency, size, security protocols, data objects, integration technology and pattern.</p>	TA
Network Design Engineer	Provides network designs for AMI and DA Endpoints and updates designs based on site surveys	NDE
Field Service Representative	Conducts initial site surveys for Network Equipment. Also provides field support for network commissioning activities.	FSR
Installation Manager	<p>Responsible for overall onsite SUPPLIER Project delivery management as it relates to the Endpoint deployment responsibilities described in the SOW including:</p> <p>Manages and schedules SUPPLIER installation resources</p> <p>Secures installation resources for work</p> <p>Manages installation scope and Project planning</p> <p>Manages installation financials</p> <p>Manages the SUPPLIER installation deployment schedule</p>	IM

Resource Type	Responsibilities	Abbreviation
	Manages installation reporting (as agreed by both Parties in the Charter & Governance Plan) Manages installation issues and risks Manages the installation contract Manages SUPPLIER internal installation management tasks and reporting	
Recommended resource types for CUSTOMER		
Project Manager	Point of contact for communication and schedule management, coordination, planning, reporting of CUSTOMER activities.	PM
Technical Architects	As-is and to-be gap assessment for MDMS, CIS, Platform, Security, Network, and upon CUSTOMER written confirmation to proceed, Disaster Recovery	TA
Customer Reporting Analyst	As-is and to-be gap assessment	CRA
Customer Processing Analyst	As-is and to-be gap assessment of 24hour clock	CPA
Billing Operations	Exception Management and Data Analysis related to the billing process	BO
Business or Integration Analyst	Integration between CUSTOMER Systems and the MDMS	IA or BA
Testing Analyst	Responsible for testing application processes, screens, integration, and performance	TSA
Meter Engineer	Provides information for meter programs and corresponding AMI HES configuration	ME
Deployment Manager	Responsible for oversight of network and endpoint installation by SUPPLIER	
WAN/Networking SME	Provide backhaul communications to all Network Devices	

4. Project Approach

The project is broken down to six separate stages:

- Planning & Preparation Stage,
- Analysis Stage,
- Design/Build/Install Stage,
- Testing Stage,

- Training Stage and
- Production Cutover & Stabilization Stage.
- Network Design and Deployment
- Endpoint Deployment

4.1. Planning & Preparation Stage

The first step of any successful project is to ensure all tasks are clearly documented and agreed to between SUPPLIER and CUSTOMER. SUPPLIER will be responsible for the Planning & Preparation stage of the project; however, this stage does require substantial involvement and integration with CUSTOMER as defined below.

4.1.1. Implementation Planning

This stage is for planning activities to gather the data needed to implement the solution. This will include identification and documentation of all requirements specified in the SOW and the creation of a more detailed Implementation Project Plan and Schedule.

During this stage:

- a) SUPPLIER will work with CUSTOMER in preparation of requirements workshop schedule and agenda;
- b) SUPPLIER will prepare workshop presentation and questionnaires together with related best practice configuration guides in advance of each workshop;
- c) SUPPLIER will conduct on-site or remote workshops and present topics and make recommendations and CUSTOMER will designate, specify and document their requirements in the Configuration Specification document. Major items include:
 1. AMI HES Hardware specification and configuration
 2. Network and Meter Deployment planning
 3. Rates, Billing Schedules, Calendars
 4. Roles and Access Rights
 5. Data Collection and Processing Schedule/Cycles
 6. Service Order Rules
 7. Alerts, Alarms, Flags & Events Rules and Related Actions
 8. Interface and Solution Architecture Specifications
 9. Master Data Synchronization specification review
 10. Legacy data migration requirements
 11. Testing Strategy and Plan
 12. Training Requirements and Plan.
- d) CUSTOMER, with SUPPLIER assistance, will place orders for all Network Equipment and Endpoints in scope for this project based on SUPPLIER lead times and deployment plan.
- e) CUSTOMER, with SUPPLIER assistance, will conduct review of the project requirements and establish definitive acceptance criteria.
- f) CUSTOMER and SUPPLIER will conduct the following Capacity and System Planning activities:
 1. CUSTOMER will present current system information and current business process flow and SUPPLIER will present system specification topics and make recommendations relative to the solution. CUSTOMER will determine the system specifications required to meet their specific objectives.

2. Based on the discussion and recommendations, SUPPLIER will complete the System Specification including plans for hardware specifications, sizing, physical and logical disk configuration of data storage for the applications and any other system requirements.
3. SUPPLIER will complete any operational plans and guides related to the general operation and administration of the applications such as Oracle database back-up strategies for high system availability, process scheduling and identification of process dependencies.
- g) SUPPLIER, with CUSTOMER assistance, will complete an updated overall project plan (the "Project Plan") to reflect any changes or details resulting from this planning stage. This plan will be the master plan related to the installation and configuration of the AMI network, Endpoints, AMI HES including specification of major project milestones. This becomes the working Project Plan which SUPPLIER and CUSTOMER must work within and provide input to.

4.1.2. Communication and Risk Escalation Plan

The Communication Plan, prepared by CUSTOMER, will be used to make certain the stakeholders of each company are aware of the upgrade plan and progress as we reach specific milestones and establish meeting and project communication cadence. The Risk Escalation plan will be enabled if there is a risk identified that may take the plan off schedule.

During this planning stage,

- a) SUPPLIER will work with CUSTOMER to provide input to the Communication and Risk Escalation Plan as relates to this project.

4.1.3. Planning & Preparation Stage Deliverables

SUPPLIER Deliverables:

- a) Project Management Plan
- b) Workshop Plan
- c) Project Schedule for AMI HES related activities
- d) Project Schedule for Network design and install related activities, including separate schedules
- e) Project Schedule for Endpoint install related activities, including sub-contractor and warehousing.
- f) AMI HES Configuration Worksheets
- g) Context Diagram for AMI HES
- h) Initial high-level project plan
- i) RACI/Roles and Responsibilities Matrix
- j) Project Contact List

4.2. Analysis Stage

This stage is for gathering the data needed to configure the system and to produce the configuration specifications and plans required to complete the installation and configuration of all system components. A table of responsibilities by work element will be prepared and the high-level Implementation Project Plan & Schedule prepared and reviewed during the Kickoff portion of the project will be updated with details learned during this stage of the project and that updated plan will become the official working Implementation Project Plan and Schedule which subsequent portions of the project will reference.

4.2.1. Environment Analysis

In this stage, SUPPLIER production environment will be reviewed to make sure system prerequisites to install the AMI HES solution are met. Examples of AMI HES Environment Analysis may include technical review and impact assessment of:

- a) RDBMS version review and upgrade requirement and recommendations,
- b) Database sizing,
- c) application server memory and file system storage, etc.

It is important to note that as part of the Environment Analysis, SUPPLIER will identify any environmental components that are not aligned to SUPPLIER specifications. SUPPLIER will be the responsible party for taking actions to resolve issues and concerns and ensuring the environment conforms to SUPPLIER specifications and recommendations.

During this stage:

- a) SUPPLIER will work with CUSTOMER to gather important data specific to the AMI HES Development, and Production environments to ensure all pre-requisite activities and risks have been clearly identified;
- b) SUPPLIER will document, communicate and resolve environmental tasks and concerns; and
- c) SUPPLIER will provide guidance and assistance to CUSTOMER as requested and within the constraints of this SOW.

4.2.2. Interface Analysis

In this stage, the parties will prepare the detailed integration documentation for each system integrating with SUPPLIER systems.

<Insert SUPPLIER Integration and Solution Architecture, including integrations with SUPPLIER endpoint installation work management system>

For each interface identified as within the scope of this project, SUPPLIER will participate in the planning and analysis process, assisting CUSTOMER personnel in identifying key decision points. CUSTOMER will ensure the appropriate representatives of each impacted business segment are available for participation and will be responsible for determining that the plan, as developed, meets its objectives.

During this stage:

- a) CUSTOMER and SUPPLIER will finalize tasks needed for the planning and analysis of all interfaces identified in this scope of work for this project
- b) For all interfaces:
 - 1. SUPPLIER will define and document the method by which data will be transferred between systems and will implement real-time integrations whenever possible;
 - 2. SUPPLIER will identify and document the technologies used by the source and destination systems for executing this interface;
 - 3. SUPPLIER will define and document the frequency at which data will be transferred using this interface;
 - 4. SUPPLIER will review and document the data elements required for this interface and the formats required
 - 5. SUPPLIER will identify and document functional requirements specific to this interface for use in development and testing (e.g. requirements traceability matrix)
- c) For all interfaces between Meter Installation Work Management System and CUSTOMER CIS:
 - 1. SUPPLIER will define and document the method by which data will be transferred between systems;

2. SUPPLIER will identify and document the technologies used by the source and destination systems for executing this interface;
 3. SUPPLIER will define and document the frequency at which data will be transferred using this interface;
 4. SUPPLIER will review and document the data elements required for this interface and the formats required
 5. SUPPLIER will identify and document functional requirements specific to this interface for use in development and testing (e.g. requirements traceability matrix)
- d) For all interfaces between CUSTOMER systems and AMI HES:
1. CUSTOMER will identify and review the business process(s) that impact each interface;
 2. CUSTOMER will verify the source and destination systems for each interface;
 3. CUSTOMER and SUPPLIER will jointly define the method and frequency by which data will be transferred between systems and will strive for real-time integrations whenever possible;
 4. CUSTOMER and SUPPLIER will jointly identify the technologies used by the source and destination systems for executing each interface;
 5. CUSTOMER and SUPPLIER will jointly define the frequency at which data will be transferred using each interface;
 6. CUSTOMER and SUPPLIER will jointly review the data elements required for each interface and the formats required;
 7. CUSTOMER will identify functional requirements specific to each interface for use in development and testing (e.g. requirements traceability matrix).

4.2.3. Endpoint Setup/Programming

In this stage, meter programs are finalized, and First Article Testing (FAT) is completed.

During this stage:

- a) CUSTOMER and SUPPLIER will develop electric meter programs using SUPPLIER field tools and will complete FAT worksheet.
- b) SUPPLIER will conduct initial review of FAT meters. CUSTOMER will then perform testing to verify FAT meters and approve production order. SUPPLIER will resolve any issues from the FAT testing and provide new FAT meters within 20 business days.

4.2.4. Network Design and Site Surveys

In this stage, CUSTOMER device locations are analyzed, and initial designs are completed. This is followed by site surveys to verify network and pole locations. This data is then fed back to the Network Design team to make revisions.

During this stage:

- a) CUSTOMER will provide all available Endpoint coordinates and asset (pole, substation, and tower) locations to SUPPLIER
- b) SUPPLIER will develop an initial design for the Initial Deployment Area that includes: Density Analysis, Buffer Analysis, Network Device Locations, Capacity Analysis, Router Locations, and Backhaul requirements
- c) SUPPLIER will develop an initial design for the Deployment Area that includes: Density Analysis, Buffer Analysis, Network Device Locations, Capacity Analysis, Router Locations, and Backhaul requirements
- d) SUPPLIER will review the initial design with CUSTOMER and incorporate any feedback into the design. Any changes that required by CUSTOMER but not inherently required to support network performance will be purchased by CUSTOMER.

- e) SUPPLIER will conduct field site surveys in and document the results in an agreed upon site survey form. Results will be collected with a SUPPLIER field tool and provided to CUSTOMER for all Network Devices to determine if locations are suitable for network infrastructure installation in a field site survey report to CUSTOMER. CUSTOMER may participate in site surveys and will receive training on certification to conduct site surveys.
- f) SUPPLIER will update network design based on results of the site surveys and will provide updated Network Equipment counts and locations to CUSTOMER.
- g) CUSTOMER will procure additional Network Equipment subject to the 5% maximum deviation as needed based on updated network design.

4.2.5. Analysis Stage Deliverables

SUPPLIER Deliverables:

- a) Environment specs (Hardware sizing, prerequisite software, versions, etc.)
- b) Integration design for AMI solution
- c) Updated AMI HES Configuration Worksheet
- d) Updated Project Plan and Schedule
- e) Standard Interface Specification documentation for all interfaces identified as within the scope of this project
- f) Implementation Project Responsibilities Matrix
- g) Field site survey report
- h) FAT worksheet
- i) Environmental Analysis Report
- j) Initial FAT report from SUPPLIER's internal testing and review of meters

5. Design, Build & Installation Stage

5.1. Server Installation

It is SUPPLIER's responsibility to setup the AMI HES Development/Test, and Production environment servers and support software infrastructure per requirements agreed to and documented by SUPPLIER. During this stage:

- a) SUPPLIER will acquire and install all environment support components:
 - 1. Server hardware and cloud services
 - 2. Data storage equipment
 - 3. 3rd party software licenses listed in Section 1.1;
- b) SUPPLIER will provide all required hardware and third-party software required to support application installation in the Development/Test and Production environments;
- c) SUPPLIER will, if needed, upgrade 3rd party software listed in Section 1.1 in the following environments: Development/Test and Production;
- d) SUPPLIER will install and configure any other third-party software to support Development/Test, and Production environments;

5.1.1. Software Installation in Development Environment

SUPPLIER will install and configure the AMI HES application software to SUPPLIER's development/test environment.

During this stage:

- a) SUPPLIER will execute a standard set of checks prior to the installation to ensure all pre-requisites have been completed;

- b) SUPPLIER will deliver release notes and release package(s) to CUSTOMER;
- c) SUPPLIER will install and configure the AMI HES application software in the development/test environment as documented in the CWB;
- d) SUPPLIER will deliver processes and documentation to migrate the AMI HES application configurations to the Production environment.
- e) SUPPLIER will perform database backup and server backup(s) prior to the software installation, if necessary.
- f) SUPPLIER will perform initial system validation to verify installation and configuration has been completed properly

5.1.2. Software Installation in Production Environment

SUPPLIER will install and migrate the configurations of the AMI HES application software to SUPPLIER's Production environment using SUPPLIER's training and documentation.

During this stage:

- a) SUPPLIER will execute a standard set of checks prior to the installation to ensure all pre-requisites have been completed;
- b) SUPPLIER will implement changes/corrections as necessary;
- c) SUPPLIER will deliver release notes and release package(s) to CUSTOMER;
- d) SUPPLIER will install the AMI HES application software in the Production environment;
- e) SUPPLIER will port the configurations for the AMI HES application software from the development/test to the Production environment;
- f) SUPPLIER will perform initial system validation to verify installation, and configuration has been completed properly and provide results for CUSTOMER review;
- g) CUSTOMER will validate the successful installation and configuration, using SUPPLIER provided scripts and validations.

5.1.3. Interface Development

In this stage, CUSTOMER will complete development of the interfaces between the CUSTOMER systems and AMI HES or Meter Installation Work Management System identified as in the scope of this project. CUSTOMER will principally be responsible for producing the design specifications as needed for SUPPLIER's end to end integration architecture, though SUPPLIER will supply all information required about the system, and insight from its experience in supporting relevant prior integration efforts, to support this process. CUSTOMER functional and technical resources will lead and perform the development (i.e. design & build) process. SUPPLIER will support the process and continue to provide guidance and knowledge about the capabilities and requirements of the system relevant to the integration effort. SUPPLIER will provide test data as required by CUSTOMER to unit test and validate the development of the interfaces.

During this stage:

- a) CUSTOMER will build and test utility system interfaces identified as in the scope of this project.
- b) CUSTOMER will, build and test designated utility third party system interfaces identified as in the scope of this project.
- c) SUPPLIER will build and test SUPPLIER's system interfaces for AMI HES or Meter Installation Work Management System for the CUSTOMER's system identified as in the scope of this project.
- d) SUPPLIER will provide standard integration specifications and sample data and CUSTOMER will conform to either those standard specifications or other mutually agreed upon specifications.

- e) SUPPLIER will provide integration between SUPPLIER systems.
- f) SUPPLIER will test all interfaces between AMI HES as part of the system testing.
- g) SUPPLIER will test all configurations and functionality of the AMI HES as part of system testing.
- h) SUPPLIER will lead and CUSTOMER will assist with test all interfaces between its systems and AMI HES prior to system testing.

5.1.4. Network Installation

In this stage, SUPPLIER and SUPPLIER's sub-contractor will install Network Equipment per the network design and field surveys. SUPPLIER will conduct network commissioning to ensure network devices register in AMI HES.

During this stage:

- a) CUSTOMER will ensure backhaul access to all Network Device locations as documented in the Field Survey. For avoidance of doubt, SUPPLIER is responsible for identifying the cellular provider for cellular data services and will resolve any cellular data service issues identified during or immediately after the Network Device is installed.
- b) CUSTOMER will perform make ready work (e.g. install pole, install transformer, etc.) as documented in the Field Survey.
- c) SUPPLIER will provide pole installation arm assemblies to install and attach to RF Network Device and router assembly kits and will provide cabling to the devices.
- d) SUPPLIER will install network devices according to SUPPLIER installation guides and the network design. If network device cannot be installed as documented in the Field Survey, SUPPLIER will identify an alternative location and review the impacts with CUSTOMER.
- e) SUPPLIER will follow all prudent safety practices in the process of device installation such as traffic management, pedestrian safety, etc.
- f) SUPPLIER will document and review with CUSTOMER the onsite commissioning process and measurements
- g) SUPPLIER will perform and document with CUSTOMER assistance onsite commissioning. This includes verification of physical installation and configuration of network devices, support importing the MMF files into AMI HES, and verification of backhaul communication.
- h) SUPPLIER will, with CUSTOMER support, complete the "as built" documentation for the installed and commissioned Network Devices.
- i) SUPPLIER will update the RF Design with the "as built" network.

5.1.5. Design, Build & Installation Stage Deliverables

SUPPLIER Deliverables:

- a) Initial Technical Architecture Overview for AMI HES
- b) Initial Integration Architecture
- c) Initial Configuration Worksheet for AMI HES
- d) Installed and Configured AMI HES
- e) Unit test scripts and unit test report for AMI HES

6. Testing Stage

This stage will focus on comprehensive end to end testing with CUSTOMER technical resources and business end users. SUPPLIER will support and provide guidance through System Integration or end-to-end Testing (SIT) and User Acceptance Testing (UAT). SUPPLIER will provide test scripts and test data for SIT and will conduct the SIT testing, with support from CUSTOMER. CUSTOMER will conduct UAT testing

with support from SUPPLIER. After the testing stage, CUSTOMER will sign off on completion of successful tests and may decide to move into Production Cutover stage.

SIT is conducted to establish connectivity between MDMS, AMI HES, CIS, Installation Management System, and other systems to ensure data is flowing accurately. UAT will be conducted with CUSTOMER end users to ensure business needs are met by the system configurations and interfaces. This will include testing of meter-to-cash processes and remote connect/disconnect processes. SUPPLIER will provide guidance and consulting to help CUSTOMER ensure the test objectives are being met. SUPPLIER will be responsible for documenting and managing the testing activities. SUPPLIER provides operational knowledge transfer of the system to CUSTOMER personnel prior to go-live. The scope of integration involved in this stage is limited to those interfaces identified as in the scope of this project and further defined in the Design & Build stage above.

6.1. System Integration Testing Preparation

CUSTOMER and SUPPLIER are jointly responsible for preparing for the integration testing and validation process and determining the acceptability of the results, however SUPPLIER is responsible for development and managing the SIT testing. SUPPLIER will be responsible for the preparation and testing of the AMI HES configuration and functionality and the integration between AMI HES and MDMS/CIS as well as the integration of Installation Management System and CIS. SUPPLIER will support, review, and assist in optimizing the design and implementation of the testing and validation processes developed by CUSTOMER relevant to the system.

During this stage of the project:

- a) SUPPLIER will develop overall test strategy and test plan.
- b) SUPPLIER, with support from CUSTOMER, will jointly develop the detailed test plan for SIT;
- c) For functional and configuration testing of AMI HES and system integration testing:
 - 1. SUPPLIER will develop test cases, test scripts and test data, and
 - 2. CUSTOMER will review test cases and test scripts and may require additional tests not included in SUPPLIER's standard test cases.
- d) SUPPLIER will prepare Performance Testing plan;
- e) SUPPLIER, with participation by CUSTOMER, will develop Operational knowledge transfer checklist.

6.1.1. System Integration Testing Execution

In this stage, SUPPLIER and CUSTOMER will jointly proceed with performance of overall System Integration Testing (SIT). SUPPLIER will be responsible for documenting and managing the testing activities. SUPPLIER provides operational knowledge transfer of the system to CUSTOMER personnel prior to go-live. The scope of integration involved in this stage is limited to those interfaces identified as in the scope of this project and further defined in the Design & Build stage above.

In this Testing stage:

- a) CUSTOMER will provide necessary CUSTOMER resources to meet testing schedule;
- b) SUPPLIER will provide necessary SUPPLIER resources to meet testing schedule;
- c) SUPPLIER will provide test files and test data as necessary to simulate the meter data and performance conditions;
- d) SUPPLIER will lead in system testing all its solution components, AMI HES;
- e) SUPPLIER will perform initial SIT of all integrations
- f) SUPPLIER will lead and CUSTOMER will assist in the execution of end to end SIT;

- g) SUPPLIER will lead and CUSTOMER will support Performance Testing to validate any “near real-time” (e.g. on-demand) functions have minimal latency;
- h) SUPPLIER, with participation and oversight by CUSTOMER, will conduct and document the results for all test cases.
- i) SUPPLIER will conduct regular defect meetings to review and prioritize the defects identified during the testing and the schedule and activities for resolution.
- j) SUPPLIER will resolve any errors and exceptions raised through the testing cycle for its product and interfaces;
- k) CUSTOMER will resolve any interface errors and exceptions raised through the testing cycle for its interfaces; and
- l) SUPPLIER, with support from CUSTOMER, will prepare an SIT report
- m) CUSTOMER will sign off on testing stage completion.

6.1.2. User Acceptance Testing Preparation

CUSTOMER is primarily responsible for preparing for the user acceptance testing and validation process and determining the acceptability of the results. SUPPLIER will support, review, and assist in optimizing the design and implementation of the testing and validation processes developed by CUSTOMER relevant to the system.

During this stage of the project:

- a) CUSTOMER, with support from SUPPLIER, will develop overall test strategy and test plans for UAT;
- b) CUSTOMER with support from SUPPLIER will prepare Use Cases and Test Cases for UAT;
- c) CUSTOMER with support from SUPPLIER will prepare Test Data for UAT;
- d) CUSTOMER with support from SUPPLIER will prepare Use Cases and Test Cases for UAT; and
- e) SUPPLIER with participation by CUSTOMER will develop Operational knowledge transfer checklist.

6.1.3. User Acceptance Testing Execution

In this stage, SUPPLIER will work with CUSTOMER to assist them with performance of overall User Acceptance Testing. CUSTOMER will be responsible for documenting and managing the testing activities. SUPPLIER provides operational knowledge transfer of the system to CUSTOMER personnel prior to go-live. The scope of testing involved in this stage is limited to those interfaces and functionality identified as in the scope of this project and further defined in the Design & Build stage above.

In this Testing stage:

- a) CUSTOMER will provide necessary CUSTOMER resources to meet testing schedule;
- b) SUPPLIER will provide necessary SUPPLIER resources to meet testing schedule;
- c) SUPPLIER will provide test files and test data as necessary to simulate the meter data conditions;
- d) CUSTOMER will lead and SUPPLIER will assist in the execution of UAT;
- e) CUSTOMER will lead and SUPPLIER will assist in UAT execution with CUSTOMER end users;
- f) CUSTOMER will track and prioritize error and exceptions for resolution;
- g) SUPPLIER will resolve any errors and exceptions raised through the testing cycle for its product and interfaces;
- h) CUSTOMER will resolve any interface errors and exceptions raised through the testing cycle for its interfaces;
- i) CUSTOMER will develop a UAT test report.
- j) CUSTOMER will sign off on testing stage completion.

6.1.4. Testing Stage Deliverables

SUPPLIER Deliverables:

- a) System test plan
- b) System test cases for AMI HES functionality
- c) System test results for AMI HES functionality
- d) Integration test plan
- e) Integration test cases and results for AMI HES
- f) Integration Validation (test plans, test data, use and test cases, and test results)– End-to-End Testing
- g) User Acceptance test plan

7. Training Stage

Modular, process-based training allows employees from all areas of the utility to understand their role in the SUPPLIER system and enables them to integrate it into their daily processes.

AMI training consists of classroom and hands-on training. SUPPLIER will provide classroom training in Network Deployment and AMI HES prior to network and AMI HES installation. Hands-on training will be provided for conducting site surveys, commissioning, using AMI Field Tools, and other activities throughout the course of the project. Additional online sessions focused on security are also included. During the installation and configuration stages, CUSTOMER personnel will be exposed to the AMI HES through the configuration effort through hands-on experience. Knowledge transfer is also provided during the Testing stage where the CUSTOMER AMI HES operations and system administration personnel are exposed to processing of data through the AMI HES against a standard test database.

This particular stage provides training relative to the integration work defined and completed in the project.

During this stage:

- a) SUPPLIER will provide and CUSTOMER will participate in:
 - 1. Network Maintenance Training
 - 2. Administrator and End User Training- AMI HES
 - 3. Online training for security
 - 4. Field Tool Training
- b) CUSTOMER will review the training and documentation and identify any training or documentation which has not fully conveyed the information necessary.
- c) SUPPLIER will enhance the training and documentation, and if necessary, repeat the training.

7.1.1. Training Stage Deliverables

SUPPLIER Deliverables:

- a) Completed classroom training
- b) User guides and training presentations
- c) AMI HES System Guides

8. Production Cutover & Stabilization Stage

8.1.1. Production Cutover

The Production Cutover stage of the project will focus on bringing technical and business work streams together as the system is used in the Production environment. The objective of this stage is to document detailed cutover plan and scheduling including rollback plan.

Within this stage, SUPPLIER will move all applications into production for the first time. This will include loading production data and beginning production operations. The parties will also conduct an initial review of opportunities to optimize system processes. SUPPLIER will plan, control, and execute the go-live process. CUSTOMER will be actively involved in assisting with the Go-Live plan as developed by the parties, and in reviewing and make suggestions for improving initial operating results.

In this stage:

- a) SUPPLIER will provide their standard Go-Live plan for AMI HES based on best practices.
- b) SUPPLIER with support from CUSTOMER will prepare Go-Live plan including tasks, roles, and dependencies. SUPPLIER will lead the development of the overall Go-live plan; CUSTOMER will add content based on CUSTOMER systems and best practices.
- c) SUPPLIER will ensure all AMI HES jobs are set up in the job scheduler with appropriate dependencies and triggers. SUPPLIER will provide the list of times and schedule times prior to Go Live.
- d) SUPPLIER will execute go-live plan in the Development/Test environment in a “dress rehearsal” mode at least once.
- e) SUPPLIER will validate the installed and configured production AMI HES
- f) SUPPLIER will provide a checklist of tests and validations that should be conducted on a live system.
- g) SUPPLIER, with support from CUSTOMER, will execute the Go-Live plan.
- h) SUPPLIER will lead and CUSTOMER will support the Initialization of the AMI HES and Network Devices:
 - 1. Move configured AMI HES into Production Environment using documentation and processes provided by SUPPLIER,
 - 2. Run Initial Master Data Full Synchronization Processes (i.e. load production core data into the AMI HES),
 - 3. Run Initial Meter Reading Analytics (MRA) process to establish baseline average daily usage data, and
 - 4. Run all identified initial processes; and
- i) SUPPLIER will lead and CUSTOMER will support turning on Normal Processing:
 - 1. All standard required processes are turned on as needed,
 - 2. Any special queries provided for reports are turned on as needed,
 - 3. Other processes are turned on as needed;
- j) SUPPLIER will lead and CUSTOMER will support in review of processes and performance times immediately after Go-Live to identify immediate optimization opportunities;
- k) SUPPLIER will resolve any system errors and exceptions raised through the production cutover cycle; and
- l) CUSTOMER will sign off on production cutover stage completion.

8.2. Production Stabilization

The Production Stabilization stage of the project is for the transition of the software support from the SUPPLIER Project Team to the SUPPLIER Support Team. The objective of this stage is to provide application

monitoring plan post-production cutover and turnover of production system to MSaaS Operations for ongoing administration. Production Stabilization will occur during the successful deployment of the meters in St. John Island and the Initial Deployment Acceptance testing.

In this stage,

- a) SUPPLIER will monitor production system for 3 months following integration cutover (“Stabilization Period”);
- b) SUPPLIER will lead and CUSTOMER will participate in preparation of handover documentation;
- c) SUPPLIER will lead and CUSTOMER will participate in the walkthrough of standard Support Procedure;
- d) CUSTOMER will assign designated, authorized CUSTOMER Support contacts; and
- e) CUSTOMER will sign off on the project completion.

8.3. Production Cutover and Stabilization Deliverables

SUPPLIER Deliverables:

- a) Operational knowledge transfer checklist
- b) Updated design and configuration documents
- c) Updated integration architecture
- d) Hardware and software optimization recommendations
- e) Standard Support Procedure

9. Endpoint Deployment

SUPPLIER shall perform Services described herein and manage this deployment process according to the Deployment Schedule. SUPPLIER responsibilities shall include, but shall not be limited to, removing meters, installing meters, installing metering related devices, completing necessary repairs, receiving and inspecting meter shipments, sample testing received meters, RMA management for failed meters, inventory management, operating cross-dock facilities, tracking and reporting on project metrics and field deployment completion data, interface development, data file exchanges, and providing any necessary training.

9.1. SUPPLIER Deployment Plan

The Deployment Plan Stage shall consist of developing an overall deployment plan based on weekly meter exchange goals and accounting for potential delays or risks due to weather and other issues.

In this stage,

- a) SUPPLIER shall receive all meters, and ancillary equipment, at SUPPLIER’s warehouse and maintain responsibility and security of the devices until they are installed and commissioned.
- b) SUPPLIER shall inspect received AMI meters and sample test these meters for quality and accuracy.
- c) SUPPLIER shall maintain a documented safety program that meets all applicable OSHA standards. Such safety plan shall include initial safety training and reinforcement by daily, weekly, and monthly workforce safety meetings for the duration of the Project.
- d) SUPPLIER shall develop, with input from CUSTOMER a complete deployment plan for VIWAPA including ramp up, ramp down, number of installers, projected weekly exchange rate throughout the deployment period taking into account CUSTOMER holidays, weather delays, and other criteria as necessary. SUPPLIER Deployment Plan shall include blackout windows as defined in VIWAPA provided schedule, not to exceed five (5) business days.

1. The SUPPLIER Deployment Plan will describe in detail the plans for St. John, St. Croix and St. Thomas Islands, in that order.
 2. The SUPPLIER Deployment Plan will include the completion of the installation of meters on St. John Island and the completion of the Initial Deployment Acceptance prior to the commencement of the installation of the meters on St. Croix Island followed by the installation of the meters on St. Thomas Island.
 3. SUPPLIER shall maintain a forward-looking detailed installation schedule of at least ninety (90) days based on the Deployment Plan
- e) SUPPLIER shall present this plan to CUSTOMER for review and approval.
- f) SUPPLIER shall develop and review with VIWAPA a customer communication process, including:
1. VIWAPA is responsible for creation and delivery of communications to the end customer regarding the AMI program, the installation of Endpoints, installation timing, etc. prior to carrying out meter exchange.
 2. VIWAPA is responsible for notifications to law enforcement and city officials of the working areas, based on SUPPLIER schedule and request.
 3. SUPPLIER attempts to contact end customer, or access to the meter if customer contact is not successful.
 4. SUPPLIER attempts to install the meter, including creation of appointments and after hours and weekend support. Note that SUPPLIER must conduct and document at least 3 field attempts, including at least one after hours or weekend attempt to gain access to the meter.
 5. Review process if the RTUs for customer access are greater than 5% to improve or prevent customer access issues.
- g) SUPPLIER shall develop and review with VIWAPA, the handling for special installation cases, including, but not limited to:
1. Tamper conditions found
 2. Opt Out meters. It is expected that SUPPLIER will install meters for customers who may opt out of the deployment and will install the meters in the appropriate configuration.
 3. Disconnected meters. It is expected that SUPPLIER will install meters in a disconnected state where the existing meter or service is disconnected and will report as such.
 4. Customer refusal
 5. Repeated no access. It is expected that SUPPLIER will make every possible effort to contact the customer for access.
 6. Hazardous conditions.
 7. Obstructions preventing meter access.
 8. Safety issues or unexpected outage conditions, including notification to SUPPLIER and VIWAPA personnel and requirements for standby support. NOTE: SUPPLIER pricing for standby support must clearly indicate the rate that will be charged for such safety hazard standby time.
- h) SUPPLIER shall establish warehouse and cross dock facilities to support inventory management, including:
1. SUPPLIER shall provide and equip facilities for receiving, storing, and dispatching of new Endpoints as well as storing meters being returned and preparing them for disposal until their disposal. Locations of such facilities will vary depending on geographic deployment. Space will be used for installation workforce, secure storage for inventory, and secure overnight parking for installer vehicles.

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2. SUPPLIER shall receive all meter and other equipment ("Inventory") deliveries at its facility(s) for inventory and storage purposes.
 3. SUPPLIER shall provide all computer equipment, internet access, office facilities, warehousing and material handling facilities, equipment staging areas, security services, bathroom facilities, etc. required to perform the services outlined in this SOW.
 4. SUPPLIER shall provide for workspace for one (1) CUSTOMER representative.
 5. SUPPLIER shall retain title and responsibility to the inventory received until such inventory is installed for service.
 6. SUPPLIER shall store all inventory in its facility(ies) in such a manner as to protect them from damage or deterioration. Contractor shall store the inventory in areas of its Facility segregated from all other goods and property located at the Facility (the "Segregated Area") and shall clearly identify them as the property of Eversource by a conspicuous sign or placard. Such identification or marking shall include marking one or units of the Inventory in each lot thereof. To the extent practicable, the Segregated Area shall be separated from the rest of the Facility.
 7. SUPPLIER shall keep all inventory free and clear of any liens, claims, security interests and other encumbrances of any nature whatsoever.
 8. SUPPLIER will transport equipment to from delivery location to SUPPLIER warehouse locations as identified in the Deployment Plan.
 9. SUPPLIER will provide work order management system, tools, warehouse equipment (such as forklift, pallet jacks), computers and associated connections, etc.
 10. Unless otherwise agreed in writing, SUPPLIER shall be responsible for receiving and inspecting all Endpoints and equipment. SUPPLIER will validate all endpoints have proper documentation to allow for receipt.
 11. SUPPLIER shall use its work order management system on a daily basis to electronically scan individual Endpoints and transfer/assign to each field technician for daily meter exchanges in an effort to help reduce the risk of lost meters. NOTE that SUPPLIER maintains ownership and responsibility for the meters until they are installed.
 12. Individual Endpoint inventory shall be conducted on a daily basis by all field technicians using formal count sheets.
 13. On a quarterly basis, SUPPLIER shall conduct an audit of the full meter inventory and report the results to CUSTOMER.
 14. At the end of each day, SUPPLIER field personnel shall return Endpoints that are equal to Endpoints taken out in the morning minus Endpoints installed plus meters removed.
- i) SUPPLIER shall be responsible for training all employees to perform the services outlined herein. Eversource reserves the right to audit the training materials and training sessions. Training shall include but is not limited to:
1. Proper meter installation for all applicable meter forms.
 2. Ability to identify meter sockets, (socket types, forms, etc.), service voltages, and service sizes.
 3. Correct reading of meter registers.
 4. Operating and maintaining data transfer systems.
 5. Training on customer communication including managing customer contacts during the installation of meters. MIV shall train on procedures for managing difficult customer situations and resolutions and coordinate with Eversource's employees on field issues.
 6. Recognize and respond properly to dangerous conditions and emergency situations.

7. Recognize and report theft of service (tampering). Included are missing seals, missing meter socket seal, current diversion.
 8. Report abnormal operating conditions as defined by Utility.
 9. Recognize damaged services and respond appropriately to safety, service, and repair issues.
 10. Identify energized meter enclosures and other unsafe meter situations.
- j) SUPPLIER shall be responsible for ensuring all personnel maintain any professional qualifications, licenses, permits, certifications and skills appropriate for the Services to be performed.
 - k) SUPPLIER shall provide all personal protective equipment, uniforms, CUSTOMER-approved photo ID badges indicating that SUPPLIER is an approved CUSTOMER contractor, transportation, computers, tools, equipment, meter socket jumper cables, vehicles, vehicle signage identifying that SUPPLIER is a CUSTOMER contractor, communications equipment (e.g., cell phones, radios), etc. required for a successful AMI meter deployment. All personal protective equipment must meet industry standards. Vehicle signage must be permanent in nature and must not be easily removed from SUPPLIER vehicles.

9.2. Deployment Execution

The Deployment Execution stage shall consist of the exchange of all electric meters for AMI electric meters in the CUSTOMER Service Territory.

In this stage,

- a) SUPPLIER shall install electric Endpoints per the Deployment Plan. Electric meters must be installed and in “normal” status in AMI HES to be considered Commissioned.
- b) SUPPLIER shall establish a sub-contract to support the warehousing and installation of AMI meters
- c) SUPPLIER shall train and maintain appropriate staffing levels of meter installers to meet the agreed upon schedule.
- d) SUPPLIER shall provide daily report of meters installed, meters that could not be accessed, and meter installations that were refused to CUSTOMER.
- e) SUPPLIER shall make unlimited attempts to install meters.
- f) For meters that are hard to access, SUPPLIER shall contact end customers to make appointments for installations.
- g) SUPPLIER shall maintain a call center to allow end customers to call to make appointments.
- h) SUPPLIER shall indemnify CUSTOMER for any claims resulting from Deployment Execution including but not limited to insurance claims due to installer accidents, end customer property damage.
- i) SUPPLIER shall provide a daily meter installation file that shall be imported into the CUSTOMER CIS to process meter exchanges.
- j) SUPPLIER shall complete any specific meter route within 6 weeks of the first meter being installed.
- k) SUPPLIER shall record at a minimum:
 1. Meter GPS coordinates
 2. Removed seal number
 3. Installed seal number
 4. Removed meter number and removed meter read
 5. Installed meter number and installed meter read
 6. Meter exchange date and time

- l) SUPPLIER shall take pictures and provide CUSTOMER access to these pictures as follows:
 - 1. Site as found
 - 2. Existing meter face so as to corroborate end reading and validate the meter seal identifier
 - 3. Meter socket
 - 4. New meter face so as to corroborate initial meter reading and validate the meter seal identifier
 - 5. Site as left
- m) SUPPLIER shall be responsible for maintaining a suitable supply of other installation needs such as doorhangers, meter seals, and other devices.
- n) CUSTOMER shall provide meter seals.
- o) SUPPLIER shall be responsible for determining if socket repairs are necessary and initiate those repairs per a defined process.
- p) SUPPLIER shall dispose of removed meters as per agreed environmentally responsible process.
- q) SUPPLIER shall provide meter exchange synchronization, via electronic interface, to CUSTOMER CIS within 24 hours of the successful installation of each meter.
- r) SUPPLIER shall remediate any meter communications issues as expediently as possible.
- s) SUPPLIER shall provide a notification of any endpoint for which the installation cannot be completed (RTU endpoint) to CUSTOMER. SUPPLIER will ensure that all criteria and retries have been attempted before an endpoint is declared RTU.
- t) CUSTOMER will install any endpoint where the premise has been identified as RTU (Return to Utility). The number of RTUs should not exceed 0.5% of VIWAPA's meter population.
- u) CUSTOMER will provision AMI HES with the newly installed devices.
- v) SUPPLIER will ensure the import of MMF files into AMI HES upon acceptance of the meter shipment and prior to the installation of any meters included in the MMF file.
- w) SUPPLIER will ensure that each installed electric Endpoint is "Normal" and communicating with a minimum acceptable performance in AMI HES and will correct any Endpoint communicating with less than acceptable performance.
- x) SUPPLIER will report any safety incidents (near misses, accidents, injuries, or unplanned outages) to CUSTOMER when they occur.
- y) SUPPLIER shall complete each Route within 60 days of installing the first meter on that Route. Route completion shall be defined as 99% of all meters in such Route are installed and provisioned.
- z) SUPPLIER shall be responsible for independent auditing and evaluation of Deployment team to ensure compliance with agreed upon work practices and that field documentation is complete and accurate. All audit material shall be available for review.
- aa) CUSTOMER reserves the right to perform independent audits at any time and as deemed necessary. SUPPLIER shall work with any audit practices to make sure that audits cover a good and consistent cross section of all installers.
- bb) SUPPLIER shall be responsible for managing all necessary field repairs by contracting with an appropriate electrician or electricians to perform repairs as necessary.
 - 1. In situations where the meter location is visibly in need of repair beyond the scope of the installer but service is operational and there is no safety concern, SUPPLIER shall RTU the meter to CUSTOMER. SUPPLIER shall leave a door hanger notifying customer of necessary repairs along with a follow up phone number to call.
 - 2. In situations where the meter location is in need of repair and the service is not operational and cannot be safely restored, installer shall immediately notify their supervisor who in turn

will initiate the repair process. Installer shall be required to remain at meter location where a potentially unsafe condition exists until a designated representative is onsite.

3. For the purposes of this agreement, a minor repair shall be characterized as any repair inside the meter socket panel. A major repair shall be characterized as a repair that requires replacement of the meter socket panel or anything outside of the meter socket panel.
4. Repairs shall be completed as expediently as possible.
5. SUPPLIER or designated electrical contractor are expected to plan for inventory typically required to make the most common expected repairs.

10. System Acceptance

10.1. Initial Deployment Acceptance (IDA)

Within 30 days of the execution of this SOW, SUPPLIER will develop the Initial Deployment Acceptance Test Plan and review such plan with CUSTOMER. SUPPLIER will update the plan with feedback supplied by CUSTOMER and this plan will become the basis for Initial Deployment Acceptance.

After SUPPLIER has installed and commissioned approximately 1,000 AMI electric meters in St. John, SUPPLIER will validate that the initial deployment population is ready for acceptance testing and SUPPLIER will notify CUSTOMER that the meters, and associated communication network is available for Initial Deployment Acceptance Testing. SUPPLIER will provide the requisite information defined in the plan to CUSTOMER as part of this notification and such information will include:

- List of AMI meters, including planned installation date, actual installation date and commissioning date.
- List of Network Devices responsible for the communications to these AMI meters and number of communications hops for each AMI meter
- Secondary path Network Devices for each of these AMI meters

CUSTOMER will review the notification and, within 5 business days either accept the start of Initial Deployment Acceptance or provide a notification in writing as to why the Initial Deployment Acceptance Test prerequisite conditions have not been met.

SUPPLIER and CUSTOMER will conduct functional testing, as defined in the Initial Deployment Acceptance Test Plan, which will include:

- On-demand read: CUSTOMER will request a total kWh register read from the electric meter and the response must be returned within sixty (60) seconds. The total register read must match the digital display of the total kWh on the meter. If the total kWh register read is not returned within sixty (60) seconds, a second retry will be attempted and if this retry fails to achieve the required response, the test will be deemed failed. Sample size is one hundred (100) tests, and pass criteria is 98% or better.
- Power status ping: CUSTOMER will request power status from the AMI electric meter and the response must be returned within sixty (60) seconds. The power status must match the powered status of the meter. If the power status is not returned within sixty (60) seconds, a second retry will be attempted and if this retry fails to achieve the required response, the test will be deemed failed. Sample size is one hundred (100) tests, and pass criteria is 98% or better.
- Disconnect: CUSTOMER may, based on availability of a customer who will support such testing, request a disconnect operation of the remote switch on the AMI meter and the response must be returned within thirty (30) seconds. The meter must be disconnected from the load and still

operating as part of the AMI network. If the disconnect is not completed within thirty (30) seconds, a second retry will be attempted and if this retry fails to achieve the required response, the test will be deemed failed. Sample size is one (1) test.

- Connect: CUSTOMER will request a connect operation of the remote switch on the AMI meter and the response must be returned within thirty (30) seconds. The meter must be connected to the load and still operating as part of the AMI network. If the connect is not completed within thirty (30) seconds, a second retry will be attempted and if this retry fails to achieve the required response, the test will be deemed failed. Sample size is ten (10) tests, and pass criteria is 90% or better.
- Meter Firmware Download: SUPPLIER will initiate a meter firmware download to the AMI meter. The download must complete within 24 hours. If the meter firmware download fails to complete within twenty-four (24) hours, another test will be conducted and if this retry fails to complete as required, this test will be deemed failed. Sample size is one (1) test, and pass criteria is 100%.
- Network communication failover: SUPPLIER will disable communications to one of the Network Devices. SUPPLIER will provide summary and detailed information all AMI meters affected by this Network Device, including average time to re-acquire communications, individual times to re-acquire communications and any AMI meter failing to re-acquire communications after 24 hours.
- CUSTOMER will request and SUPPLIER will deliver within twenty-four (24) hours all available and agreed upon reports from the AMI HES. CUSTOMER will evaluate each report and determine the success or failure of each.
- SUPPLIER will review all network monitoring tools and dashboards from the AMI HES with CUSTOMER and validate that each is working as required.

SUPPLIER will operate the 1,000 Initial Deployment AMI meters and associated Network Devices according to the SaaS agreement for AMI HES for 30 consecutive days. CUSTOMER will periodically, access the AMI HES to view the performance and status of these meters. At the end of the 30 day period, SUPPLIER will provide the individual and average communications performance for the 1,000 Initial Deployment AMI meters as well as calculation of the following performance metrics:

- Network Uptime Success Criteria: The Network Uptime shall be calculated as defined herein.
 - UA, the total actual uptime for the commissioned Network Devices used in the IDA, is measured as the summation of the uptime for said Network Devices for all thirty (30) days in the Performance Testing Period.
 - UP, the total potential uptime for the commissioned Network Devices used in the IDA, is calculated as forty-three thousand two-hundred (43,200), the number of minutes in a thirty (30) day period, multiplied by the number of commissioned Network Devices used in the IDA
 - Network Uptime Success = UA / UP expressed as a percentage
- Register Reads Success Criteria for Electric: Register Reads Success shall be calculated as defined herein.
 - E, the total number of expected register reads, is calculated on a daily basis for one-day prior and is equal to the number of all AMI Electric Meters among the IDA test Endpoints that satisfy Available Meter criteria for the day performance is being calculated. For clarity, the performance for Monday's reads is calculated as of 6:00 AM local time on Tuesday.
 - S, the total number of successful register reads, is calculated on a daily basis and is equal to the number of AMI Electric Meters among the IDA Test Endpoints that for the day

performance is being calculated (i) satisfy the Available Meter criteria for that day, and (ii) successfully export the midnight read from the AMI HES and processed and stored in the MDMS no later than 6:00 AM local time on the day of calculation.

- Daily Register Read Performance = S / E expressed as a percentage.
- Interval Reads Success Criteria for Electric: Interval Reads Success shall be calculated as defined herein.
 - The total number of expected interval reads is calculated on a daily basis for one-day prior and is based on:
 - X = Number of AMI Electric Meters among the IDA test Endpoints transmitting at five (5) minute intervals and that satisfy the definition of Available Meters for that day
 - Y = Number of AMI Electric Meters among the SAT test Endpoints transmitting at fifteen (15) minute intervals and that satisfy the definition of Available Meters for that day
 - For clarity, the performance for Monday's reads is calculated as of 6:00 AM local time on Tuesday.
 - The total number of successful interval reads is calculated on a daily basis and is based on:
 - A = Number of unique interval reads (kWh for electric meters) timestamped between 0:00 and 24:00 for the day performance is being measured from those AMI Electric Meters among the IDA test Endpoints transmitting at five (5) minute intervals and that satisfy the definition of Available Meters for that day
 - B = Number of unique interval reads (kWh for electric meters) timestamped between 0:00 and 24:00 for the day performance is being measured from those AMI Electric Meters among the IDA test Endpoints transmitting at fifteen (15) minute intervals and that satisfy the definition of Available Meters for that day
 - Interval reads for the previous day must be exported from the AMI HES and processed and stored in the MDMS no later than 6:00 AM local time to be considered successful interval reads.
 - Daily Interval Read Success = $[A + B] / [(96 * Y) + (288 * X)]$ expressed as a percentage.
 - For the Performance Testing Period, Interval Reads Success = $[\sum A + \sum B] / [(96 * \sum Y) + (288 * \sum X)]$ expressed as a percentage, where \sum indicates that the value is summed for all days of the Performance Testing Period.

10.2. System Acceptance Test (SAT)

Within 90 days of the execution of this SOW, SUPPLIER will develop the System Acceptance Test Plan and review such plan with CUSTOMER. SUPPLIER will update the plan with feedback supplied by CUSTOMER and this plan will become the basis for Project Acceptance.

After SUPPLIER has installed and commissioned 100% of the AMI electric meters, SUPPLIER will validate that the deployment population is ready for acceptance testing and SUPPLIER will notify CUSTOMER that the meters, and associated communication network is available for System Acceptance Testing. SUPPLIER will provide the requisite information defined in the plan to CUSTOMER as part of this notification and such information will include:

- Number of AMI meters
- List of meter reading routes, including planned completion date, actual completion date and commissioning date.

- Number of Network Devices responsible for the communications to these AMI meters and the average and maximum number of communications hops for the AMI meters
- % of AMI meters with redundant communications paths

CUSTOMER will review the notification and, within 5 business days either accept the start of NPDA testing or provide a notification in writing as to why the NPDA Test prerequisite conditions have not been met.

SUPPLIER will operate the Network Devices and Meters according to the SaaS agreement for AMI HES for 30 consecutive days. CUSTOMER will periodically, access the AMI HES to view the performance and status of these meters. At the end of the 30-day period, SUPPLIER will provide the communications performance for the SAT AMI meters as well as calculation of the following performance metrics:

- Network Uptime Success Criteria: The Network Uptime shall be calculated as defined herein.
 - UA, the total actual uptime for the commissioned Network Devices used in the NPDA, is measured as the summation of the uptime for said Network Devices for all thirty (30) days in the Performance Testing Period.
 - UP, the total potential uptime for the commissioned Network Devices used in SAT, is calculated as forty-three thousand two-hundred (43,200), the number of minutes in a thirty (30) day period, multiplied by the number of commissioned Network Devices used in the IDA
 - Network Uptime Success = UA / UP expressed as a percentage
- Register Reads Success Criteria for Electric: Register Reads Success shall be calculated as defined herein.
 - E, the total number of expected register reads, is calculated on a daily basis for one-day prior and is equal to the number of all AMI Electric Meters among the NPDA test Endpoints that satisfy Available Meter criteria for the day performance is being calculated. For clarity, the performance for Monday's reads is calculated as of 6:00 AM local time on Tuesday.
 - S, the total number of successful register reads, is calculated on a daily basis and is equal to the number of AMI Electric Meters among the NPDA Test Endpoints that for the day performance is being calculated (i) satisfy the Available Meter criteria for that day, and (ii) successfully export the midnight read from the AMI HES and processed and stored in the MDMS no later than 6:00 AM local time on the day of calculation.
 - Daily Register Read Performance = S / E expressed as a percentage.
- Interval Reads Success Criteria for Electric: Interval Reads Success shall be calculated as defined herein.
 - The total number of expected interval reads is calculated on a daily basis for one-day prior and is based on:
 - X = Number of AMI Electric Meters among the NPDA test Endpoints transmitting at five (5) minute intervals and that satisfy the definition of Available Meters for that day
 - Y = Number of AMI Electric Meters among the NPDA test Endpoints transmitting at fifteen (15) minute intervals and that satisfy the definition of Available Meters for that day
 - For clarity, the performance for Monday's reads is calculated as of 6:00 AM local time on Tuesday.
 - The total number of successful interval reads is calculated on a daily basis and is based on:

- A = Number of unique interval reads (kWh for electric meters) timestamped between 0:00 and 24:00 for the day performance is being measured from those AMI Electric Meters among the NPDA test Endpoints transmitting at five (5) minute intervals and that satisfy the definition of Available Meters for that day
- B = Number of unique interval reads (kWh for electric meters) timestamped between 0:00 and 24:00 for the day performance is being measured from those AMI Electric Meters among the NPDA test Endpoints transmitting at fifteen (15) minute intervals and that satisfy the definition of Available Meters for that day
- Interval reads for the previous day must be exported from the AMI HES and processed and stored in the MDMS no later than 6:00 AM local time to be considered successful interval reads.
- Daily Interval Read Success = $[A + B] / [(96 * Y) + (288 * X)]$ expressed as a percentage.
- For the Performance Testing Period, Interval Reads Success = $[\sum A + \sum B] / [(96 * \sum Y) + (288 * \sum X)]$ expressed as a percentage, where \sum indicates that the value is summed for all days of the Performance Testing Period.
- Number of AMI meters not meeting the minimum performance threshold for the 30 day period
- Number of events and alarms, by event type, received each day
- Network Devices failing during the 30 day test period
- AMI meters failing during the 30 day test period

11. Project Timeline

No work will begin until after this SOW is executed and SUPPLIER has received a Notice to Proceed. Final project schedule for the project will be determined and mutually agreed upon at the end of the analysis phase. The following timeline is included for discussion purposes only.

<High Level schedule to be inserted here>

12. Remote or On-Site Support

The work defined within this agreement shall be provided by SUPPLIER to CUSTOMER either as remote or onsite support at the discretion of CUSTOMER and mutually agreed upon. However, all work which involves field activities or training must be conducted onsite. The Pricing Section describes SUPPLIER's recommendation and travel costs. SUPPLIER commits to minimizing travel expenses to the extent it does not impact the performance of the project.

For remote support provided by SUPPLIER, CUSTOMER must provide adequate remote access for delivery of services described in this statement of work. SUPPLIER will coordinate with CUSTOMER to discuss level of access required and test connectivity within the planning and preparation stages of agreement. To keep travel at a minimum, SUPPLIER will require VPN access to all applicable CUSTOMER systems and environments.

13. Change Management Process

The Change Management Process is intended to set expectations on how the changes will be managed, what defines a change, the purpose and role of the change control board, and the overall change management process.

Depending on the extent and type of proposed changes, changes project documentation and the communication of these changes will be required to include any approved changes into the project plan and ensure all stakeholders are notified. Types of changes include:

- Scheduling Changes: changes which will impact the approved project schedule.
- Financial Changes: changes which will impact the approved project budget
- Scope Changes: changes which are necessary and impact the project's scope which may be the result of unforeseen requirements that are unplanned.

The SUPPLIER Project Manager must ensure that any approved changes are communicated to the project stakeholders. Additionally, as changes are approved, the Project Manager must ensure that the changes are captured in the project documentation where necessary. These document updates must then be communicated to the project team and stakeholders as well.

13.1. Change Process Steps:

- a) Raise the need for change; Change Requestor will submit written change request to the SUPPLIER Project Manager
- b) Project Manager logs change in SUPPLIER Project and Portfolio Management Tool
- c) Perform project review and impact analysis- SUPPLIER Project Manager evaluates the change conducting a preliminary analysis on the impact of the change to risk, budget, schedule, and scope and seeks clarification from team members and the change requestor. If the change is within the approval authority of the Project Manager, he provides disposition of the change. Otherwise, the Project Manager works with both SUPPLIER Project Management office and CUSTOMER Project Manager with the preliminary analysis
- d) Disposition of Change Request- CUSTOMER Project Manager and SUPPLIER Project Manager will discuss the proposed change and decide whether it will be approved based on all submitted information.
- e) Implementation of Approved Changes– If a change is approved by the CUSTOMER Project Manager and/or CUSTOMER Sponsor and applicable SUPPLIER project leadership, the Project Manager will update and re-baseline project documentation as necessary. This includes SOW, Schedule and Pricing.

13.2. Change Management Responsibilities:

SUPPLIER will:

- Log all requests for change;
- Seek clarification from change requestors;
- Evaluate changes for risk, cost, schedule, and scope;
- Process requests for change at the Project level;
- Provide feedback change requestors; and
- Document changes.

CUSTOMER will:

- Request changes through SUPPLIER;
- Seek clarification from change requestors;
- Support provision of contractual changes as needed to document changes prior to execution; and

- Approve the change.

14. Payment Terms

The Services outlined in this SOW shall be provided for a price of \$TBD. These Services will be invoiced according to the following Milestone Schedule:

<Payment terms inserted here. Include payments and hold backs for payment upon completion of IDA, and SAT. Offeror must provide a proposed payment schedule in the response to this SOW>

All travel expenses are included in the pricing shown above.

15.Exhibit A: Network Design and Deployment Area

<SUPPLIER to insert network design from RFP response>

16.Exhibit B: Glossary of Terms

Unless otherwise defined in this SOW, capitalized terms used herein will have the meanings assigned to them in the MSA. The following defined terms are in addition to those defined in the MSA.

Term	Definition
AMI	Advanced Metering Infrastructure.
API	Application Programming Interface.
Available Endpoint	<p>An Endpoint that is installed in the defined coverage area (under FAN Design Coverage;)</p> <p>meets the Endpoint Acceptance criteria (read by the AMI HES Application for 3 consecutive days); VIWAPA has provided SUPPLIER with current records of Endpoint ID, premise address and account information that is stored in the AMI HES Application enabling the Endpoint to be mapped and linked to the appropriate premise/account.</p> <p>Endpoints excluded from Available status: Damaged or removed endpoints (including endpoints with tampers and/or cut cables – where applicable); Endpoints impacted by local RF interference; Endpoints impacted by RF blocking that occurred since Endpoint Acceptance. Examples include building and other permanent or semi-permanent structures, vehicles parked in front of meter, metal cabinets, etc.</p>
BPM	Business Process Model: Document that details the business and performance requirements of the System.
Change Management	Change Management is the process or procedures that guide change within an organization.
CIS	VIWAPA's Customer Information System.
AMI HES	AMI Headend System: SUPPLIER Software, that: (i) facilitates communications with Endpoint; (ii) provides a series of web services for upstream systems, such as MDM and outage management; and (iii) is the system of record for Endpoint configurations.
Daily Read Rate	A calculation of Available Endpoints in which a read has been received at the AMI HES and processed and stored in the MDMS by 8:00am everyday divided by the quantity of Endpoints installed and available on the day of the test.
Day	A twenty-four-hour period from 12:00 A.M. to 11:59 P.M (or 00:00 to 23:59).
Deployment Plan	This plan defines field activities conducted by SUPPLIER. Specifically, it is the schedule that defines the order in which Network deployment and Endpoint deployment will be assigned and completed. It will include, but not be limited to, the following:

Term	Definition
	<p>Build Schedule based on the agreed upon Forecasting and Order Procedures</p> <p>Delivery Schedule used to define product delivery schedule to CUSTOMER</p> <p>Site survey process to validate pole location</p> <p>Pole make ready & WAN validation activities</p> <p>Network Device installation schedule – used by CUSTOMER and SUPPLIER to install and manage the Network installation process</p> <p>Endpoint installation schedule – used by SUPPLIER to install and manage the Endpoint installation process</p>
Endpoint/Meter	An electric meter provided by SUPPLIER and described in the SUPPLIER Meter Technical Reference Guide.
FAN	Field Area Network. As a general statement, the FAN includes all equipment, connectors and firmware from the Network Devices down to the Endpoints. Includes the collection of SUPPLIER provided Network Devices and Endpoints that utilize Radio Frequency (RF) technology of SUPPLIER AMI enabling the transmission of two-way data between Endpoint and the AMI HES.
Network Design	SUPPLIER deliverable document that contains the installation locations of Network Devices, anticipated coverage of each Device, and assumptions for coverage percentages.
Network Device	Network Device defines either a CGR and/or a Routing Node Collector and/or Router and includes power cables, antenna kits, and pole mounting kits. .
FAT	<p>Factory Acceptance Testing will consist of, the verification of individual Network Device and Endpoints forms:</p> <ul style="list-style-type: none"> • Product Documentation • Nameplates • Communication • Meter Configuration and functionality • Security verification
Field Tools	Field Tools: SUPPLIER Application used in the field and meter shop to interface with the Endpoints. It is typically used to push firmware, configure an Endpoint extract log files, investigate performance, etc. when communication over the Network is not available.
Functional Testing	Testing that is completed by SUPPLIER when Licensed Software is installed and/or configured during the Project. Basic functional tests are performed to verify component operation.

Term	Definition
Go-Live	Go-Live is the point in the Project when VIWAPA moves from the previous reading/meter data management process to using the System to facilitate the delivery of billing determinants. This step is typically done over a weekend to minimize impact to billing processes.
HES	Headend System: SUPPLIER Software
IDD	Interface Design Document: Document providing design specifics for all SUPPLIER interfaces to enterprise IT systems provided within this scope. The IDD is generated based on workshop discussions and includes how the interface architecture and web services will be used to transfer data to and from the CIS.
Interface	Integration point between two components within VIWAPA System that has an agreed format to exchange information or complete a transaction. This is commonly a web service or batch file and typically is implemented between a SUPPLIER and non-SUPPLIER component of the System.
Integration Testing	Testing conducted to demonstrate that the required data flows are operating correctly between the systems in the System and maintain business integrity, in accordance with the requirements for each system. Attention is paid to the mechanics of the interfaces, such as the data transport management.
SUPPLIER Support Services	SUPPLIER Support Services department provides VIWAPA with post Project issue escalation/resolution.
MDMS or MDM	Meter Data Management System: MeterSense Software that is used to collect data from the AMI HES and to deliver billing determinants to VIWAPA's CIS system.
Gap Filling	Gap Filling. A configurable process by which HES will automatically attempt to retrieve missed data.
Routing Node or Router	SUPPLIER Router is a Network device provided by SUPPLIER, installed during the Network deployment and described in the AMI Pricing Summary.
PCD	Product Configuration Design Document that contains description and screenshots of the configuration settings within applications.
PCM	Project Control Manual. Developed jointly by CUSTOMER and SUPPLIER. A document frequently employed by project teams which consists of a compilation of Project processes and procedures (Project Control Documents) agreed upon by Project Team. Examples include deployment processes, safety processes, installation procedures, escalation plans, etc.
PMO	Program Management Office which is staffed and managed by VIWAPA.

Term	Definition
Production	Production state occurs after the System has been accepted, Project deliverables have been accepted, and System has been transitioned to SUPPLIER Support Services.
Project	The development and implementation of the System, which includes the design, installation, configuration, training, testing, deployment, optimization, and provisioning of the System for VIWAPA.
Project Plan	Formal Project schedule used to guide and control the execution of a Project. It is used to align resources, guide and control the execution of the Project
Project Team	VIWAPA, VIWAPA partners, SUPPLIER and SUPPLIER partners who support the Project.
Register Data	A recorded value of total energy measurement at a point in time and collected from the Endpoint.
RMA	Return Material Authorization. Process and documentation that authorizes the return of System products.
SaaS	Software as a Service: SUPPLIER owned Software where VIWAPA purchases a subscription for access and use of the SUPPLIER owned and hosted applications. VIWAPA is responsible for the day-to-day operation of the subscribed Software to support the business operation.
SFTP	Secure File Transfer Protocol enables VIWAPA to send and receive files to/from SUPPLIER SaaS. Typically used to facilitate master data and reading data transfer.
SME	Subject Matter Expert. A resource that has a high degree of functional or technical knowledge about an area or product.
System Acceptance	System Acceptance will occur upon SUPPLIER's completion of Network Device and Endpoint Acceptance, and System Acceptance Testing. Includes the formal signoff of the Project indicating the completion of the defined commitments.
System Cutover	Cutover from old (current) system to new System (occurs as part of post-Go-Live activities)
Support	Support shall include, but not be limited to providing personnel/resources, knowledge, reviewing materials, resolving issues, moving the Project forward, and assisting in general matters to complete the Project under this SOW. Support as defined herein is in addition to any support that shall be provided as a Service under the MSA.
TAD	Technical Architecture Design: Deliverable document provided by SUPPLIER and used during the Design Phase to outline the computing environment of the System for the various phases of the Project. When

Term	Definition
	complete and accepted, the TAD documents the technical and server environment, the System configuration and the entity relationship diagram which will detail all security protocols and feature sets at each step of the data flow between the entities. Upon acceptance of the TAD, VIWAPA will maintain for updates and accuracy.
Test Plan	Document that describes the phases of testing for the Project, test objectives for each phase, test entry criteria, test phase exit criteria, and test cases. VIWAPA resources will have input into the Test Plan that SUPPLIER will develop with input from VIWAPA
UAT	User Acceptance Testing: Following Integration Testing, this testing combines both functional and integration testing to verify that the developed System works as a whole. The objective is to ensure that the System designed is structurally sound and will function correctly in accordance with the Operating Specifications and in the environment in which it was installed.
UI	User Interface. The means by which VIWAPA user will interact with the System components. Each component will have a unique UI that VIWAPA users will interact with.
VPN	Virtual Private Network. A point to point connection between disparate networks that ensures the appropriate level of security to the connected systems when the underlying network infrastructure alone cannot provide it.
WAN	Wide Area Network. Communication System provided by VIWAPA between Network Devices and the AMI HES.
WSDL	Web Services Description Language - an XML-based interface definition that is used for describing a web service. Describes the service, expected input parameters and returned data.
XML	Extensible Markup Language: a metalanguage which allows users to define their own customized markup languages. Common format for AMI HES and MDMS files.
XSD	XML Schema Definition: A document that describes the structure of an XML document.

17.Exhibit C: Supplier RFP Response

<Insert SUPPLIER's response to Configuration Requirements Matrix>

18.Exhibit D: AMI Business Requirements

<To be updated>

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
Meter to Bill	MB.1.0	Billing performance should be equal to or better than current performance (H)		Performance	N/A
	MB.2.0	Billing errors should be less than 0.1% (H)		Performance	N/A
	MB.5.0	The solution must be able to collect interval and register energy data from AMI meters		AMI+MDMS	Comply
	MB.5.1		All reads collected from AMI meters must be delivered to the MDMS, based on the AMI meter program.	AMI+MDMS	Comply
	MB.5.2		At a minimum, the AMI meters must deliver kWh-Delivered, kWh-Received, kVA and Phase A volts from all residential meters (15 minute intervals) and kWh-Delivered, kWh-Received, kVAh and kVA, and Phase A, B, C volts (5 minute intervals) from all commercial meters	AMI	Comply
	MB.5.3		The AMI commercial meters (and AMI residential meters) must be configured to perform a daily self-read and reset of demand	AMI	Comply
	MB.5.4		The AMI commercial meters and AMI HES must be able to automatically reset demand on a 6 month schedule	AMI	Comply
	MB.5.5		Interval and register reads must be collected from each meter program	AMI	Comply
	MB.5.6		AMI HES must recognize data gaps or uncollected meter reads and fill them in a timely fashion	AMI	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	MB.5.7		The AMI HES must capture and deliver to the MDMS midnite registers, including the daily and monthly demand reads, as appropriate each day, and prior to 6AM the following morning	AMI+MDMS	Comply
	MB.5.8		AMI HES must capture interval data from any electric meter at least every 4 hours.	AMI+MDMS	Comply
	MB.5.9		AMI HES must deliver to the MDMS all collected interval data from any electric meter at least every hour.	AMI	Comply
	MB.5.10		The MDMS must receive and process any read captured from the AMI meter by the AMI HES	AMI+MDMS	Comply
	MB.5.11		The MDMS must support requesting and receiving any read from any AMI meter within 30 seconds	AMI+MDMS	Comply
	MB.5.12		The MDMS must identify meter data for AMI meters which have not completed the data synchronization and provisioning process (unknown meters) and alarm the user of such unknown meters	AMI+MDMS	Comply
	MB.5.13		MDMS must receive all meter reads from AMI meters from the AMI HES	AMI+MDMS	Comply
	MB.5.14		The MDMS must not lose data for unknown meters and must automatically reprocess data from unknown meters when the AMI meters have completed the data synchronization and provisioning process	AMI	Comply
	MB.5.15		The MDMS and AMI HES must automatically identify any data not collected from the meter and collect such data to ensure that a complete	AMI+MDMS	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
		The MDMS must be able to automatically validate, estimate and store interval and register energy data from AMI meters	data set is available since the initial installation of the meter		
	MB.5.16		The MDMS must support reading and billing from multiple meters on one account/premise where the account has a Utility meter and a Generation meter measuring the output of the solar and battery generation.	MDMS	Comply
	MB.6.0				
	MB.6.1		Valid data must not be overwritten by estimated data	MDMS	Comply
	MB.6.2		The MDMS must be able to receive and process data out of chronological order without exception	MDMS	Comply
	MB.6.3		All data retrieved from AMI meters must be validated	MDMS	Comply
	MB.6.4		The MDMS must validate interval data against configurable rules	MDMS	Comply
	MB.6.5		The MDMS must validate register reads against configurable rules	MDMS	Comply
	MB.6.6		The MDMS must identify gaps in intervals and estimate such missing intervals	MDMS	Comply
	MB.6.7		The MDMS must identify missing register reads and estimate such missing registers	MDMS	Comply
	MB.6.8		The MDMS must identify missing register reads and extrapolate such missing registers by the end of the day	MDMS	Comply
	MB.6.9		The MDMS must identify any extrapolated register reads where an actual anchor read has	MDMS	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
			been received and re-estimate such read to represent that actual consumption		
	MB.6.10		The MDMS must automatically identify missing interval or register reads resulting from a meter change and automatically estimate such missing data	MDMS	Comply
	MB.6.11		The MDMS must not estimate kWh-Received, kVAh, kWh-Net	MDMS	Comply
	MB.6.12		The MDMS must not estimate consumption for any meter experiencing a power outage	MDMS	Comply
	MB.6.13		The MDMS must correctly estimate missing reads due to a power outage extending across midnite or multiple days	MDMS	Comply
	MB.6.14		The MDMS must interpolate any extrapolated reads once anchor reads have been received	MDMS	Comply
	MB.6.15		The MDMS must store all received, validated and estimated data	MDMS	Comply
	MB.6.16		The MDMS must process the daily interval reads into daily consumption, TOU (Time of Use) and daily peak demand values	MDMS	Comply
	MB.6.17		The MDMS must minimize manual interaction with meter data. Any manual interaction must be validated and documented.	MDMS	Comply
	MB.6.18		The MDMS must identify any billing determinant provided to CIS for billing, where such billing determinant has been changed due to re-estimation or receipt of actual reads (Billing Data Change Report)	MDMS	Comply
	MB.6.19		Authorized individuals must be able to view raw and processed data (Billing Analyst BA)	MDMS	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	MB.6.20		Authorized individuals must be able to edit interval and register reads (BA)	MDMS	Comply
	MB.6.21		The MDMS must allow the user to easily initiate a Service Order Request to CIS for the field investigation or replacement of an AMI meter upon identification of a data issue with the meter	MDMS	Comply
	MB.7.0	The solution must be able to collect and store voltage data from AMI meters		N/A - Title	N/A - Title
	MB.7.1		Interval voltage (average) must be collected from each meter type	AMI	Comply
	MB.7.2		Average interval voltage data must be delivered to the MDMS	AMI+MDMS	Comply
	MB.7.3		AMI HES must be able to capture instantaneous voltage from any selected meter every 5 minutes	AMI	Comply
	MB.7.4		The MDMS must not estimate missing voltage	MDMS	Comply
	MB.7.5		Authorized individuals must be able to view raw voltage data	AMI	Comply
	MB.8.0	The solution must be able to produce customer bills using reads from AMI meters		N/A - Title	N/A - Title
	MB.8.1		The CIS must be able to produce customer bills using reads from AMI meters as delivered from the MDMS	MDMS	Comply
	MB.8.2		The MDMS must validate that an AMI meter is properly installed and can produce the proper billing determinants	AMI+MDMS	Comply
	MB.8.3		The MDMS must support billing from AMI meters for all current VIWAPA rates	MDMS	Comply
	MB.8.4		The CIS must bill a customer across a meter change (non-AMI to AMI)	N/A - CIS	N/A - CIS
	MB.8.5		The CIS must bill a customer across a meter change (AMI to AMI)	N/A - CIS	N/A - CIS

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	MB.8.6		The CIS must request billing reads for an AMI meter 1 days prior to the scheduled billing day.	N/A - CIS	N/A - CIS
	MB.8.7		The CIS must receive billing reads from the MDMS for an AMI meter within +/- 1 day of the scheduled billing day	N/A - CIS	N/A - CIS
	MB.8.8		The CIS must bill customers from actual or estimated billing determinants supplied by the MDMS	N/A - CIS	N/A - CIS
	MB.8.9		The MDMS must produce demand (kVA) billing determinants from received and estimated kVA intervals.	MDMS	Comply
	MB.8.10		The MDMS must produce billing determinants for energy-only (e.g. non-demand) customers using Preferred Register reads (where the Preferred Register Read is defined in Step 630).	MDMS	Comply
	MB.8.11		The MDMS must produce solar billing determinants for solar customers (kWh-Consumed (from utility) and kWh-Generated (from Solar panels and battery)) as appropriate for solar accounts using Preferred Register reads.	MDMS	Comply
	MB.8.12		The MDMS must produce demand billing determinants calculated from daily AMI demand values as delivered from the AMI meter.	MDMS	Comply
	MB.8.13		The MDMS must produce demand billing determinants (Monthly Peak kVA Demand and kWh-Delivered Register Read) without estimated reads for demand accounts.	MDMS	Comply
	MB.8.13.a		The MDMS must, if enabled, produce demand billing determinants (Monthly Peak kVA	MDMS	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
			Demand and kWh-Delivered Register Read) using estimated reads for demand accounts.		
	MB.8.14		The MDMS must produce demand billing determinants for Commercial meters (6 month Peak kVA Demand and kWh-Delivered Register Read) for commercial accounts	MDMS	Comply
	MB.8.15		The MDMS must be able to easily change commercial accounts from 6 month Peak kVA demand calculation to monthly kVA demand calculation	MDMS	Comply
	MB.8.16		The MDMS must deliver billing determinants for demand customers (KVA and total KWH) time stamped with the billing date.	MDMS	Comply
	MB.8.17		The MDMS must not produce demand billing determinants for demand billing customers calculated from invalid or estimated data, unless the MDMS is specifically configured to use esimated reads.	MDMS	Comply
	MB.8.18		The solution must have documented exception processes for any billing exception occurring within the MDMS or CIS.	MDMS	Comply
	MB.8.19		The CIS must be able to rebill across a meter change with data delivered from the MDMS	MDMS	Comply
	MB.8.20		The user must be able to correct a read in MDM and trigger CIS to complete billing	MDMS	Partial Comply
	MB.8.22		The MDMS must be able to calculate Master and totaled billing determinants as needed for CIS to bill such accounts. This is a FUTURE requirement.	MDMS	Comply
	MB.8.23		Place holder for commercial meters which are reset every 6 months for reads received from the meter and billing produced	MDMS	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	MB.8.24		Place holder for the calculation of the 6 month demand value for commercial customers	MDMS	Comply
	MB.8.25		For the commercial accounts, the MDMS must include a documented process for establishing and storing the monthly peak demand for any month incurring a meter change to support the calculation and delivery of a Ratchet Demand value for CIS.	MDMS	Comply
	MB.8.27		The CIS must be able to bill customers without an AMI meter from AMR read (as is process)	N/A - CIS	N/A - CIS
	MB.8.28		The MDMS must receive and process billing requests for FR (Final Read), FO (Final Off) and IR (Initial Read) activities	MDMS	Comply
	MB.8.29		The MDMS must allow an authorized user to calculate or view the peak kVA demand from the daily kVA demands using a specified start and end date to support the exchange and commissioning of an AMI meter on a demand account.	MDMS	Comply
	MB.9.0	The solution must be able to initiate new customer accounts using the initial reads from AMI meters			
	MB.9.1		The CIS must be able to initiate a new customer account	MDMS	Comply
	MB.9.2		The CIS must be able to initiate a new customer account which is demand billed	N/A - CIS	N/A - CIS
	MB.9.3		The CIS must identify a new account where the AMI meter is in disconnected state and	N/A - CIS	N/A - CIS

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
			automatically reconnect the meter via a command to the MDMS		
	MB.9.4		The CIS must be able to initiate a new customer account and force a close out of the previous customer account	N/A - CIS	N/A - CIS
	MB.9.5		The CIS receive billing reads from the MDMS on the date of requested move-in day	N/A - CIS	N/A - CIS
	MB.9.6		The CIS must support coincident move-out and move-in (also coincident with DNP (disconnection for non-pay orders outstanding))	N/A - CIS	N/A - CIS
	MD.10.0	The solution must be able to close out customer accounts using reads from AMI meters			
	MD.10.1		The CIS must be able to close out a customer account which has an AMI meter with billing reads provided by MDMS	N/A - CIS	N/A - CIS
	MD.10.2		The solution must close out a customer account which is demand billed with meter reads provided by MDMS	N/A - CIS	N/A - CIS
	MD.10.3		The CIS must automatically disconnect an AMI meter via a command to the MDMS on a closed customer account, where the AMI meter supports remote disconnect	N/A - CIS	N/A - CIS
	MD.10.4		The solution must allow a customer to change their existing move-out date	N/A - CIS	N/A - CIS
	MD.10.5		The solution must allow a customer to move-out in the future	N/A - CIS	N/A - CIS
	MD.10.6		The solution must allow a customer to move-out in the past	N/A - CIS	N/A - CIS

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	MD.10.7		MDM is required to capture a read from the meter prior to issuing a reconnect and disconnect when such connect or disconnect is requested by CIS.	MDMS	Comply
	MD.10.8		MDM should, if enabled, provide an estimated read for any meter being disconnected or reconnected where the read was not successfully captured.	MDMS	Comply
	MB.11.0	The solution must be able to support new rates as added by VIWAPA			
	MB.11.1		The MDMS must have a documented process and training for configuring a TOU rate, where TOU billing determinants are calculated by the MDMS from the interval data.	MDMS	Comply
	MB.11.1		The MDMS must have a documented process and training for configuring a demand rate, where demand billing determinants are calculated by the MDMS from the interval data.	MDMS	Comply
	MB.11.2		The solution must allow customers to change their bill date	MDMS	Comply
	MB.12.0	The solution must meet accuracy and performance requirements for the AMI meter reading and billing			
	MB.12.1		The AMI HES must retrieve and deliver to the MDMS better than 99.5% of register reads daily by 6:00AM	AMI	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	MB.12.2		The AMI HES must retrieve and deliver to the MDMS better than 99.5% of interval reads daily by 6:00AM	AMI	Comply
	MB.12.1.a		The AMI HES must retrieve and deliver to the MDMS register reads within one hour of receipt	AMI	Comply
	MB.12.2.a		The AMI HES must retrieve and deliver to the MDMS interval reads within one hour of receipt	AMI	Comply
	MB.12.3		The MDMS must be able to receive, validate, estimate and process meter reads for 120,000 meters (4 channels of 15 minute data for residential electric and 8 channels of 5 minute data for commercial electric) within 4 hours of receipt	MDMS	Comply
	MB.12.4		The solution must produce a bill from 99.5% actual reads from AMI meters as delivered from the MDMS	MDMS	Comply
	MB.12.5		The solution must produce a bill from 99.9% actual or estimated reads from AMI meters as delivered from the MDMS	MDMS	Comply
	MB.12.6		The MDMS must produce a daily report validating d and e above based on billing data delivered to the CIS.	MDMS	Project Specific Report
	MB.12.7		The MDMS must be able to produce billing determinants and CIS must be able to produce bills for AMI meter reads for 25,000 customers in a day	MDMS	Comply
	MB.12.8		The solution must create less than 0.1% billing errors per month	N/A - CIS	N/A - CIS
	MB.13.0	The solution must have billing reports			

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	MB.13.1		The MDMS must produce an unbilled revenue report at the end of the month	MDMS	Comply
	MB.13.2		The CIS must identify any customer not billed on schedule	N/A - CIS	N/A - CIS
	MB.13.3		The MDMS must report meter reads expected and not received	MDMS	Comply
	MB.13.4		The MDMS must report, by cycle & route, customers to be billed and successfully billed (billing reads provided to CIS)	MDMS	Project Specific Report
	MB.13.5		The solution must report, by cycle & route, the amount of reads requested by CIS compared to what was sent by the MDMS	MDMS	Project Specific Report
	MB.13.6		The MDMS must report a list by cycle and route of billing requests not satisfied daily.	MDMS	Project Specific Report
	MB.13.7		The solution must report the number and type of billing errors	N/A - CIS	N/A - CIS
	MB.13.8		The MDMS must report the monthly consumption (kWh-Delivered) and monthly peak demand (kVA) for each commercial account (commercial 6 Month Report)	MDMS	Comply
	MB.14.0	The solution must have reports for billing and reading			
	MB.14.1		The MDMS must provide an unbilled consumption report by rate	MDMS	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	MB.14.2		The MDMS must provide a report identifying the number and type of billing determinant calculation errors	MDMS	Project Specific Report
	MB.14.3		The MDMS must provide a report identifying billing requests (cycle and off cycle) not satisfied	MDMS	Project Specific Report
	MB.14.4		The MDMS must provide a daily report of meter reads not received and expected (Missing reads)	MDMS	Project Specific Report
	MB.14.5		The MDMS must provide a Detailed & Status Route Report for all cycle & routes billed	MDMS	Project Specific Report
	MB.14.6		CIS must provide detailed Consumption by Tiers for each billed category (ex. commercial, residential, Industrial)	N/A - CIS	N/A - CIS
	MB.14.7		The MDMS must provide a usage on Inactive - Consumption where there is no account or disconnected meter	MDMS	Comply
	MB.14.8		The MDMS must provide an unknown meter report	MDMS	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	MB.14.9		The MDMS must provide a zero consumption report	MDMS	Comply
	MB.14.10		The MDMS must provide an excessive consumption report (high bill report)	MDMS	Comply
	MB.14.11		The MDMS must provide a consumption too low report	MDMS	Comply
	MB.14.13		The MDMS must provide a monthly disconnected & reconnected accounts report	MDMS	Comply
	MB.14.14		The MDMS must provide total number of active & inactive meters by cycle & route	MDMS	Comply
	MB.14.16		The MDMS must provide AMI performance reports	MDMS	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	MB.14.17		The MDMS must provide validation and estimation exception reports to identify any exceptions from VEE which require attention by AMI Operations.	MDMS	Comply
	MB.14.18		The MDMS must provide VEE reports on the performance of the VEE processing	MDMS	No Comply
	MB.14.19		The MDMS must provide VEE reports or a documented process which allows Customer Services to assess the effectiveness of the VEE settings by identifying the number and type of validation exceptions and cases where valid data is identified as invalid.	MDMS	Comply
Deployment	D.1.0	Install and activate AMI meters on schedule (H)		AMI / Installation Services	Comply
	D.2.0	Ensure no damage to customer premises and homes during installation. Identified a direct resource to handle these during pilot phase quickly(H)		AMI / Installation Services	Comply
	D.3.0	Gather and verify information during installation and update system (H)		AMI / Installation Services	Comply
	D.4.0	AMI deployment will be performed by cycle & route and any route should be completed within 30 days (before the next cycle).		AMI / Installation Services	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	D.5.0	Place holder for issues where a route is not completed within 30 days impacting AMR and AMI reading		AMI / Installation Services	Comply
	D.6.0	All devices will be installed according to VIWAPA installation standards. Refer to VIWAPA installation standards for installation of network devices on VIWAPA poles, third party poles and structures, underground areas.		AMI / Installation Services	Comply
	D.7.0	The solution must be able to plan (labor, material, timing) the installation of network devices		AMI / Installation Services	Comply
	D.7.1		SUPPLIER must produce network coverage plan identifying full coverage of all meters with sufficient capacity to meet the AMI program requirements	AMI	Comply
	D.7.2		The network coverage plan must identify the location for all network devices.	AMI	Comply
	D.7.3		SUPPLIER, using the network coverage plan, must produce an installation plan for network equipment, including number of endpoints per network device	AMI / Installation Services	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	D.7.4		The installation plan must produce a material plan for acquiring and receiving network equipment	AMI / Installation Services	Comply
	D.7.5		SUPPLIER must be able to conduct network surveys and capture relevant installation requirements for the network equipment	AMI / Installation Services	Comply
	D.7.6		SUPPLIER must be able to conduct network surveys and capture relevant installation requirements for the network equipment	AMI / Installation Services	Comply
	D.7.7		The network coverage plan must identify the WAN requirements for each Network Device.	AMI / Installation Services	Comply
	D.7.8		The network coverage plan must identify the average and maximum number of hops	AMI / Installation Services	Comply
	D.8.0	The solution must be able to plan (labor, material, timing) the installation of AMI meters			
	D.8.1		SUPPLIER must produce a high level installation plan	AMI / Installation Services	Comply
	D.8.2		SUPPLIER must produce a detailed AMI installation plan	AMI / Installation Services	Comply
	D.8.3		SUPPLIER must regularly adjust the AMI installation plan based on installation results	AMI / Installation Services	Comply
	D.8.4		SUPPLIER must produce a material plan for acquiring and receiving AMI meters	AMI / Installation Services	Comply
	D.8.5		SUPPLIER must provide a report for Customer Solutions to understand where and when meters are to be installed	AMI / Installation Services	Comply
	D.8.6		VIWAPA Communications must communicate plans to customers before their meters are installed	AMI / Installation Services	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	D.8.7		All meters must be installed according to VIWAPA standards for safety	AMI / Installation Services	Comply
	D.9.0	The solution must be able to procure and receive equipment (AMI network and AMI meters)			
	D.9.1		CIS and SUPPLIER Field Installation Management System must be able to automatically load 10,000 meter records at a time, including manufacturer test results	AMI / Installation Services	N/A - CIS
	D.9.2		VIWAPA must be able to receive and inspect AMI meters	AMI / Installation Services	Comply
	D.9.3		VIWAPA/SUPPLIER must be able to quarantine AMI meters until they are received into Warehouse for sample testing, then received into AMI inventory	AMI / Installation Services	Comply
	D.9.4		The VIWAPA Receiving Department must be able to receive AMI network equipment	AMI / Installation Services	Agree
	D.9.5		AMI vendor (SUPPLIER) must electronically provide AMI meter information to Metering Supervisor prior to the receipt of the meters	AMI / Installation Services	Comply
	D.9.6			N/A - Blank	N/A - Blank
	D.9.7			N/A - Blank	N/A - Blank
	D.9.8		SUPPLIER must, at the end of the deployment, validate that all AMI meters have been installed or delivered to VIWAPA receiving from AMI Deployment	AMI / Installation Services	Comply
	D.9.9		The solution must, at the end of deployment, account for all network devices received and installed in GIS	AMI / Installation Services	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	D.9.10		AMI HES must be updated with an electronic file for network equipment	AMI / Installation Services	Comply
	D.9.11		AMI HES must be updated with and electronic file for AMI Meters	AMI / Installation Services	Comply
	D.9.12		Ten percent of all AMI meters will be AQL accepted, including sample testing, prior to allowed installed	AMI / Installation Services	Comply
	D.9.13		All asset information for meters will be loaded into CIS	AMI / Installation Services	N/A - CIS
	D.9.14		All asset information for network devices will be loaded into GIS once installed	AMI / Installation Services	N/A - GIS
	D.9.15		VIWAPA must be able to procure ancillary equipment to support the installation (locking rings, etc.)	AMI / Installation Services	Agree
	D.10.0	The solution must be able to install AMI network devices to provide network coverage for all meters in VIWAPA territory			
	D.10.1		Each network device must be surveyed and documented before installation	AMI / Installation Services	Comply
	D.10.2		All permits and agreements must be procured prior to install of equipment	AMI / Installation Services	Further Information Needed
	D.10.3		Each network device will be entered into GIS after successful installation	N/A - GIS	N/A - GIS
	D.10.4			N/A - Blank	N/A - Blank
	D.10.5		SUPPLIER must install network equipment and capture all installation details and, where appropriate, Network Device configuration file	AMI / Installation Services	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	D.10.6		AMI Operations/SUPPLIER must validate correct installation and operation of the AMI network devices	AMI / Installation Services	Comply
	D.10.7		The AMI Operations, with support from SUPPLIER, must validate coverage of the AMI network devices	AMI / Installation Services	Comply
	D.12.0	The solution must be able to install AMI meters on all customer premises, where such AMI meter do not already exist.			
	D.12.1		SUPPLIER must be able to identify Routes in CIS for the initiation of installation of meters	AMI / Installation Services	Agree
	D.12.2		All AMI meters will be installed by SUPPLIER resources, unless such meter is an RTU meter.	AMI / Installation Services	Comply
	D.12.3		All AMI installs must be tracked by Work Order	AMI / Installation Services	Comply
	D.12.4			N/A - Blank	N/A - Blank
	D.12.5		CIS must issue work orders and meters to VIWAPA workers for installation	N/A - CIS	N/A - CIS
	D.12.6		The installer must install AMI meters and capture all exchange information in the SUPPLIER handheld	AMI / Installation Services	Comply
	D.12.7			N/A - Blank	N/A - Blank
	D.12.8		VIWAPA, using an electrical subcontractor, will resolve service/socket problems identified during the deployment of the AMI meter and complete the installation of the meter using a Service Order	AMI / Installation Services	Agree

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	D.12.9		If the installer encounters a meter in a disconnected state, the installer will install an AMI meter pre-configured in a disconnected state.	AMI / Installation Services	Comply
	D.12.10		Any new connections/services will have an AMI meter installed and will be read manually until that cycle & route is changed out. NOTE: This will not be the case for demand meters, or program these demand meters for manual reading and then reprogram over the air once the cycle & route is being changed out.	N/A - VIWAPA	N/A - VIWAPA
	D.12.11		All AMI meters, including demand meters, must be installed and commissioned (cutover to AMI billing) before the next billing cycle.	AMI / Installation Services	Comply
	D.12.12			N/A - Blank	N/A - Blank
	D.12.13		SUPPLIER must validate all captured exchange information prior to upload to CIS.	AMI / Installation Services	Comply
	D.12.14		SUPPLIER must dispose of or recycle removed meters according to VIWAPA requirements and standards	AMI / Installation Services	Agree
	D.12.15		SUPPLIER must maintain all failed meters identified during deployment and send directly to SUPPLIER for warranty returns.	AMI / Installation Services	Comply
	D.12.16		SUPPLIER will store meters for at least 30 days prior to recycling	AMI / Installation Services	Comply
	D.13.0	The solution must be able to exchange and validate the AMI meter installation between CIS, MDM and AMI HES			

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	D.13.1		SUPPLIER must validate the accuracy and correctness of the meter exchange information at each data handoff	AMI / Installation Services	Comply
	D.13.2		CIS must not allow two AMI meters to exist at a Service Point	N/A - CIS	N/A - CIS
	D.13.3		CIS must automatically retire removed meters, which are not AMI meters	N/A - CIS	N/A - CIS
	D.13.4		SUPPLIER must upload data for successful exchanges each day to CIS, after the information has been verified by SUPPLIER quality control.	AMI / Installation Services	Comply
	D.13.5		SUPPLIER must upload pictures of exchanges to its database and make these pictures available to authorized VIWAPA resources	AMI / Installation Services	Comply
	D.13.6		CIS must process exchange data automatically once uploaded from SUPPLIER.	N/A - CIS	N/A - CIS
	D.13.7		CIS must create exception records for any exchange exceptions	N/A - CIS	N/A - CIS
	D.13.8		GIS must upload GPS coordinates from SUPPLIER meter exchange	AMI / Installation Services	Comply
	D.13.9		GPS coordinates must be captured for every AMI meter and will ultimately be maintained in GIS	AMI / Installation Services	Comply
	D.13.10		CIS must synchronize the MDM the new AMI meter installation or removal information	N/A - CIS	N/A - CIS
	D.13.11		MDM must synchronize AMI HES with new AMI installation data	AMI+MDMS	Comply
	D.13.12		AMI HES must discover and configure new AMI meters	AMI	Comply
	D.13.13		The AMI HES must identify AMI meters communicating and for which it has not received provisioning notification from MDM	AMI+MDMS	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	D.13.14		The MDM must identify AMI meters installed and not provisioned	AMI+MDMS	Comply
	D.13.15		The MDM must identify AMI meters installed and not programmed correctly	AMI+MDMS	Comply
	D.13.16		The MDM must identify AMI meters installed and not communicating or not meeting a minimum level of performance (90%)	AMI+MDMS	Project Specific Report
	D.13.17		The MDM must identify any AMI meter installed and not communicating the proper meter data information	AMI+MDMS	Comply
	D.13.18		CIS must validate the synchroniziation between CIS and MDMS	N/A - CIS	N/A - CIS
	D.13.19		The MDM must validate data synchronization between MDMS and AMI HES and automatically correct any discrepancies identified.	AMI+MDMS	Partial Comply
	D.14.0	The solution must provide tools and information for Customer Solutions to serve the customers			
	D.14.1		The MDM must provide Customer Solutions with the ability to perform an On Demand Read from CIS or the MDMS user interface.	MDMS	Comply
	D.14.2		The MDM must provide CIS with all or selected Register Reads retrieved from the AMI meter, as requested by the CIS	MDMS	Comply
	D.14.3		The MDM must provide to CIS an exception notification for Register Reads which are not successfully captured from the AMI meter when requested by the CIS	MDMS	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	D.14.4		The MDM must provide Customer Solutions with the ability to request power status from any AMI meter via CIS or the MDMS user interface	MDMS	Comply
	D.14.5		The MDM must provide CIS with a power on notification if the AMI meter can successfully respond to a meter ping	MDMS	Comply
	D.14.6		The MDM must provide to CIS an exception notification for power status request which is not successfully captured from the AMI meter	MDMS	Comply
	D.14.7		The MDM must provide Customer Solutions with the ability to verify the switch status of any AMI meter equipped with a disconnect switch via CIS or MDMS user interface	MDMS	Comply
	D.14.8		The MDM must provide CIS with an Open or Close status from the AMI meter based on the state of the switch in the AMI meter	MDMS	Comply
	D.14.9		The MDM must provide to CIS an exception notification for switch status which is not successfully captured from the AMI meter	MDMS	Comply
	D.14.10		The SUPPLIER installation management system must provide Customer Services with the ability to view AMI meter installation photos	AMI / Installation Services	Comply
	D.14.11		The solution must be able to receive and manage customer complaints and claims regarding the AMI meter installation	CIS-N/A	CIS-N/A
	D.14.12		All interactions of customers with the call center, other than appointment scheduling, will be captured and synchronized to CIS.	MDMS	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	D.15.0	SUPPLIER must produce reports for tracking of the AMI deployment process			
	D.15.1		AMI meters planned vs. actually installed report	AMI / Installation Services	Comply
	D.15.2		AMI meters pending installation and not yet installed	AMI / Installation Services	Comply
	D.15.3		AMI meters installed, provisioned and commissioned. The report should be filtered by type of meter.	AMI / Installation Services	Comply
	D.15.4		AMI installed and not provisioned	AMI / Installation Services	Comply
	D.15.5		AMI meters installed, provisioned and not communicating with the minimum performance level	AMI / Installation Services	Comply
	D.15.6		AMI meters installed daily and weekly	AMI / Installation Services	Comply
	D.15.7		AMI meters installed and communicating daily and weekly	AMI / Installation Services	Comply
	D.15.8		Customer complaints daily, including pending or actual installation details	AMI / Installation Services	Comply
	D.15.9		AMI network devices planned vs. actually installed report	AMI / Installation Services	Comply
	D.15.10		Billing exceptions associated with AMI deployment daily and weekly (CIS)	N/A - CIS	N/A - CIS
	D.15.11		Daily alerts and warnings (eg: tampering, broken seals, voltage, meter display etc)	AMI / Installation Services	Comply
	D.16.0	System Requirements		N/A - Title	N/A - Title
	D.16.1		CIS will initiate and track all installations via Service Order (H)	N/A - CIS	N/A - CIS

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	D.16.2			N/A - Blank	N/A - Blank
	D.16.3		GIS will be the system of record for network assets	N/A - GIS	N/A - GIS
	D.16.4		AMI HES will be the system of record for AMI meter and module firmware.	AMI	Comply
	D.16.5		MDMS will manage and track the synchronization and provisioning of AMI meters on the AMI HES (H)	AMI+MDMS	Comply
	D.16.6		The AMI HES will be responsible for tracking and managing the communication with all AMI meters (H)	AMI	Comply
	D.16.7		The AMI HES will be responsible for tracking all alarms and statistics for the AMI network equipment (H)	AMI	Comply
	D.16.8		SUPPLIER management system will be responsible for the management and tracking of the mass installation of all AMI meters.	AMI	Comply
	D.16.9		VIWAPA will provide backhaul communications wherever possible.	AMI / Installation Services	Agree
	D.17.0	Reports are required to manage and track the installation process:			
	D.17.1		AMI meters planned vs. installed	AMI / Installation Services	Comply
	D.17.2		AMI meters installed, provisioned and commissioned	AMI / Installation Services	Comply
	D.17.3		AMI meters installed and not provisioned	AMI / Installation Services	Comply
	D.17.4		AMI meters discovered and not installed	AMI / Installation Services	Comply
	D.17.5		AMI meters installed by week	AMI / Installation Services	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	D.17.6		AMI meters transitioned to operational state by week	AMI / Installation Services	Comply
	D.17.7		Customer complaints and billing errors	AMI / Installation Services	Comply
	D.17.8		AMI HES reports & Dashboards (insert Collection Engine standard reports here)	AMI / Installation Services	Comply
	D.17.9	<input type="checkbox"/>	MDMS reports and dashboards (insert MDMS standard reports here)	AMI / Installation Services	Comply
	D.18.0	Reports are required to manage and track the network deployment:			
	D.18.1	<input type="checkbox"/>	Network devices installed vs. planned	AMI / Installation Services	Comply
	D.18.2		Network devices installed by week	AMI / Installation Services	Comply
Connect and Disconnect	CDC.1.0	All customers eligible for disconnect should be disconnected after appropriate notification and interaction (H)		N/A - CIS	N/A - CIS
	CDC.2.0	Customers should not be disconnected without proper notification (H)		N/A - CIS	N/A - CIS
	CDC.3.0	Disconnects will be performed between 8:00 am and 4:00 pm Mondays – Thursday & Fridays until 12 noon.		N/A - CIS	N/A - CIS
	CDC.3.1		Disconnect for non-payment will not be performed before 9:00 am	N/A - CIS	N/A - CIS

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	CDC.4.0	Customers must be provided at least 24 hours' notice prior to disconnect		N/A - CIS	N/A - CIS
	CDC.4.1		Customers to be remotely disconnected for non-payment should be notified of the impending disconnect 1 hour prior to the disconnect	N/A - CIS	N/A - CIS
	CDC.5.0	Only authorized users will be allowed to issue connects (CSR'S) and disconnect orders (Collections Officer & Customer Solutions Manager & one other may do disconnect for non-payment)		N/A - CIS	N/A - CIS
	CDC.6.0	The solution must identify customers in arrears and eligible for disconnect for non-payment		N/A - CIS	N/A - CIS
	CDC.6.1		If a Disconnection Order is cancelled, the solution must cancel the disconnection request for the meter.	CIS-MDMS-AMI	Comply
	CDC.6.2		The solution must prevent the request of a disconnect if the customer has paid their bill	N/A - CIS	N/A - CIS
	CDC.6.3		All customers eligible for disconnection should be disconnected after appropriate notification and interaction.	N/A - CIS	N/A - CIS

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	CDC.7.0	The solution must be able to identify customers disconnected for non-payment and eligible for reconnection		N/A - CIS	N/A - CIS
	CDC.8.0	The solution must support the ability to connect and disconnect a customer upon their request or emergency		N/A - CIS	N/A - CIS
	CDC.8.1		The solution must support the ability to remove a meter upon a customer's request to disconnect service for maintenance or emergency	N/A - CIS	N/A - CIS
	CDC.8.2		The solution must support the ability to disconnect a customer's service at the transformer upon a customer's request to disconnect service for maintenance or emergency	N/A - CIS	N/A - CIS
	CDC.8.3		MDMS must correctly estimate any missing data with no consumption where the meter is disconnected or the service is disconnected.	MDMS	Comply
	CDC.9.0	The solution must be able to automatically disconnect a customer where a remote capable AMI meter is installed		N/A - CIS	N/A - CIS
	CDC.9.1		The CIS must not allow past dated disconnect requests to be sent to MDM (Disconnect orders which cannot be fulfilled will be cancelled and reissued)	N/A - CIS	N/A - CIS

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	CDC.9.2		The CIS must not disconnect customers who cannot be disconnected (life support, etc.). They will be flagged appropriately in CIS	N/A - CIS	N/A - CIS
	CDC.9.3		The CIS must have an override to allow disconnect of life support (and other) accounts with proper authorization.	N/A - CIS	N/A - CIS
	CDC.9.4		The CIS must be able to cancel open disconnect orders individually and in bulk.	N/A - CIS	N/A - CIS
	CDC.9.5		Solution (CIS and MDMS) should process pending remote disconnects at regular interval determined by VIWAPA to prevent excessive call center loading (No more than 25 disconnects every 10 minutes)	N/A - CIS	N/A - CIS
	CDC.9.6		Solution (CIS and MDMS) should provide a method to disconnect a remote disconnect meter immediately.	CIS-MDMS-AMI	Comply
	CDC.9.7		The solution must allow the delay or cancellation of disconnect orders where weather, or other conditions (e.g. holidays), indicate that disconnects should not occur	CIS-MDMS-AMI	Comply
	CDC.9.8		The solution must not disconnect customers after 4:00 PM and before 8:00 AM, and not on Fridays after noon, weekends or holidays.	N/A - CIS	N/A - CIS
	CDC.9.9		The solution (MDMS and AMI HES) must be able to disconnect at least 100 meters per hour	MDMS - AMI	Comply
	CDC.9.10		All disconnection and reconnection will be initiated from CIS, CIS will always be the system of record for Disconnection orders.	N/A - CIS	N/A - CIS

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	CDC.10.0	The solution must be able to automatically reconnect a customer where a remote capable AMI meter is installed		N/A - CIS	N/A - CIS
	CDC.10.1		The CIS must not allow past dated connect requests to be sent to MDM	N/A - CIS	N/A - CIS
	CDC.10.2		The CIS should trigger automatic reconnection if full payment made on delinquent amount	N/A - CIS	N/A - CIS
	CDC.10.3		The solution must allow the customer to set the time for the reconnect.	N/A - CIS	N/A - CIS
	CDC.10.4		The solution must allow after hours connect of a customer	N/A - CIS	N/A - CIS
	CDC.10.5		The solution must be able to connect at least 100 meters per hour	MDMS - AMI	Comply
	CDC.10.6		The solution must reconnect a customer within 24 hours of payment	N/A - CIS	N/A - CIS
	CDC.11.0	The solution must automatically disconnect service upon customer move-out where there is no active customer and an AMI meter has remote disconnect capability		N/A - CIS	N/A - CIS
	CDC.12.0	The solution must automatically reconnect service upon customer move-in when a Service Order is generated and an AMI meter has remote reconnect capability		N/A - CIS	N/A - CIS

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	CDC.12.1		The reconnect Service Order will be generated at the time and date of the customer requested connect	N/A - CIS	N/A - CIS
	CDC.13.0	The solution (MDMS and AMI HES) must identify meters which fail to disconnect or reconnect		MDMS - AMI	Comply
	CDC.13.1		The solution (MDMS and AMI HES) must provide notification to the requestor of failure to disconnect or reconnect	MDMS - AMI	Comply
	CDC.13.2		The MDMS should automatically retry the connection or disconnection of a meter if the first request failed.	MDMS - AMI	Comply
	CDC.13.3		The AMI meter must monitor voltage on the load side of the AMI meter and prevent a connect if voltage is present	AMI	Comply
	CDC.14.0	The solution must identify disconnected meters where service has been re-established without instruction from VIWAPA		MDMS - AMI	Comply
	CDC.14.1		The solution (MDMS and AMI HES) must identify if a customer reconnects service	MDMS - AMI	Comply
	CDC.14.2		The solution (MDMS and AMI HES) must identify if a reconnect of service occurs where the connect operation was not initiated by CIS	MDMS - AMI	Comply
	CDC.15.0	The MDMS must collect and deliver a reading with every disconnect and reconnect order		MDMS - AMI	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	CDC.16.0	The MDMS must identify disconnected meters or disconnected service		MDMS - AMI	Comply
	CDC.16.1		The CIS must provide a notice to MDMS whenever a meter or service is disconnected	CIS-MDMS	Comply
	CDC.16.2		The CIS must provide a notice to MDMS whenever a meter or service is connected	CIS-MDMS	Comply
	CDC.16.3		The MDMS must monitor any disconnected meter for load side voltage and generate a work request to CIS	MDMS - AMI	Comply
	CDC.16.4		The MDMS must monitor any disconnected meter for unauthorized usage and generate a work request to CIS	MDMS - AMI	Comply
	CDC.16.5		The MDMS must monitor any disconnected service for reconnection and generate a work request to CIS	MDMS - AMI	Comply
	CDC.16.6		The MDMS must perform VEE on disconnected meters accounting for the fact that the meter has been disconnected.	MDMS	Comply
	CDC.16.7		The MDMS must perform VEE on disconnected services accounting for the fact that the meter is unpowered.	MDMS	Comply
	CDC.16.8		The MDMS must not alert for meter failure any meter where the service has been disconnected where such alert is due to the disconnected meter (e.g. No alert for zero consumption).	MDMS	Comply
	CDC.17.0	System Requirements			
	CDC.17.1		All connect and disconnect operations will initiate from CIS, except in emergency situations (H)	MDMS - AMI	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	CDC.17.2		CIS will track Life Support and Critical Account information and ensure that these accounts will not be disconnected, or only disconnected with approval.	N/A - CIS	N/A - CIS
	CDC.17.3		CIS will have all checks to ensure that no customer is improperly disconnected.	N/A - CIS	N/A - CIS
	CDC.17.4		CIS will manage the disconnect process including non-disconnect days, etc. (Throttling will be achieved by the account services personnel as they schedule the disconnects)	N/A - CIS	N/A - CIS
	CDC.17.5		The MDMS will track all connect and disconnect successes and failures, as well as which user or system initiated the request (H)	MDMS	Comply
	CDC.18.0	Reporting Requirements			
	CDC.18.1		Disconnect and connect performance report (This is a daily report showing numbers for yesterday. This will be a single report with the columns as shown below and one row for each cycle and route) "a) Cycle" "b) Route" "c) Number of disconnects attempted" "d) Number of disconnects successful" "e) Average time to disconnect" "f) Maximum time to disconnect" "g) Number of connects attempted" "h) Number of connects successful" "i) Average time to connect" "j) Maximum time to connect"	MDMS - AMI	Project Specific Report

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	CDC.18.2		<p>Disconnect and Connect Failure report (This is a daily report showing each meter which failed to disconnect or connect yesterday. This is a single report with the columns as shown below and one row for each meter which experienced a failure to connect or disconnect (or obtain a read with the disconnect))</p> <p>"a) Meter number"</p> <p>"b) Operation (Connect or Disconnect)"</p> <p>"c) Time of requested disconnect/connect"</p> <p>"d) Reason for failure"</p>	MDMS - AMI	Project Specific Report
	CDC.18.3		<p>Tamper/Unauthorized consumption detailed report (This is a daily report for meters yesterday where a tamper or unauthorized connect or unauthorized usage is identified. This is a single report with the columns as shown below and one row for each meter that experienced unauthorized usage (e.g. the meter is disconnected and reported consumption since the disconnect), or the meter sent a notification that it was connected and MDMS did no such request or the meter sent a notification that it was disconnected and the MDMS did no such request)</p> <p>"a) Meter Number"</p> <p>"b) Tamper Condition (Unauthorized Usage, Unauthorized Connect, Unauthorized Disconnect)"</p> <p>"c) Meter state (Disconnected or Connected)"</p> <p>"d) Disconnect/Connect date/time (if such meter was disconnected or connected by AMI. If non-AMI meter, then this can be the effective</p>	MDMS - AMI	Project Specific Report

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
			date/time of the notification to MDMS from CIS of meter disconnect or connect)" "e) Read at time of Disconnect or Connect (Ditto)" "f) Read from midnite (last nite)"		
Asset Lifecycle	AL.1.0	All Meters must be accurate within acceptable industry standards (H)		AMI	Comply
	AL.2.0	The location of any AMI device must be known (H)		AMI	Comply
	AL.3.0	The solution must be able to plan for and acquire AMI meters and AMI network devices to support growth and maintenance		N/A - VIWAPA	N/A - VIWAPA

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	AL.4.0	The solution must be able to receive, validate and configure new AMI network devices		AMI	Comply
	AL.4.1		The solution must create Service Orders for the installation of a new AMI Network Device	N/A - CIS	N/A - CIS
	AL.4.2		The solution must process the completed installation of an AMI Network Device	AMI	Comply
	AL.4.3		The solution must synchronize AMI HES with the installation of AMI Network Device	AMI	Comply
	AL.4.4		The solution must validate the correct operation and configuration of the new AMI Network Device. NOTE: Validation of configuration and operation may be manual, but must be documented in a Standard Operation Procedure (SOP)	CIS-MDMS-AMI	Comply
	AL.5.0	The solution must be able to exchange AMI meters			
	AL.5.1		The solution must create Service Orders for the exchange of an AMI meter	N/A - CIS	N/A - CIS
	AL.5.2		The solution must allow the exchange of a non-AMI meter with another non-AMI meter	N/A - CIS	N/A - CIS
	AL.5.3		The solution must allow the exchange of an AMI meter with another AMI meter	N/A - CIS	N/A - CIS
	AL.5.4		The solution must allow the exchange of an AMI meter with a non-AMI meter	N/A - CIS	N/A - CIS
	AL.5.5		The solution must allow the exchange of a non-AMI meter with an AMI meter	N/A - CIS	N/A - CIS
	AL.5.6		CIS must automatically process the completed exchange of an AMI meter	N/A - CIS	N/A - CIS

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	AL.5.7		CIS must automatically synchronize MDMS with the exchange of AMI meter	N/A - CIS	N/A - CIS
	AL.5.8		MDMS must automatically provision AMI HES with the exchange of AMI meter	MDMS - AMI	Comply
	AL.5.9		MDMS must automatically validate the correct operation and configuration of the new AMI meter and create an exception if a configuration or operation exception is identified.	MDMS	Comply
	AL.5.10		CIS must automatically synchronize MDMS with the removal of an AMI meter	N/A - CIS	N/A - CIS
	AL.5.11		CIS must automatically synchronize MDMS with the replacement of AMI meter with non-AMI meter	N/A - CIS	N/A - CIS
	AL.5.12		CIS must automatically synchronize MDMS with the replacement of AMI meter with AMI meter	N/A - CIS	N/A - CIS
	AL.5.13		CIS must automatically synchronize MDMS with the replacement of non-AMI meter with AMI meter	N/A - CIS	N/A - CIS
	AL.5.14		MDMS must provision AMI HES with the removal of an AMI meter	MDMS - AMI	Comply
	AL.5.15		CIS must automatically synchronize MDMS with the change of a CTPT	N/A - CIS	N/A - CIS
	AL.5.16		CIS must be able to reverse or fix a meter install where the installation data is captured incorrectly.	N/A - CIS	N/A - CIS
	AL.5.17		CIS must automatically synchronize MDMS with a meter install reversal	N/A - CIS	N/A - CIS
	AL.5.18		MDMS must automatically provision AMI HES with a meter install reversal	MDMS - AMI	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	AL.5.19		CIS must be able to reverse a meter removal where the removal information is captured incorrectly.	N/A - CIS	N/A - CIS
	AL.5.20		CIS must automatically synchronize MDMS with a meter removal reversal	N/A - CIS	N/A - CIS
	AL.5.21		MDMS must automatically provision AMI HES with a meter removal reversal	MDMS - AMI	Comply
	AL.5.22		The CIS, with data provided from the MDMS, must correctly bill from the data from the new AMI meter	N/A - CIS	N/A - CIS
	AL.6.0	The solution must allow for a customer to change rates			
	AL.6.1		CIS must support a customer changing their rate of service	N/A - CIS	N/A - CIS
	AL.6.2		CIS must update MDMS with any change of registers or configuration required for rate change	N/A - CIS	N/A - CIS
	AL.6.3		The solution must correct bill the customer on the new rate	N/A - CIS	N/A - CIS
	AL.7.0	The solution must be able to validate, reconfigure and repair removed AMI meters and AMI network devices			
	AL.7.1		The MDMS must identify failed AMI meters	MDMS	Comply
	AL.7.2		The solution must be able to replace failed AMI meters	N/A	N/A
	AL.7.3		The solution must identify AMI meters which fail under warranty	N/A	N/A
	AL.7.4		The solution must be able to return AMI meters under warranty	N/A	N/A

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	AL.7.5		The solution must be able to return AMI Network Devices under warranty	N/A	N/A
	AL.7.6		The solution must identify failed AMI Network Devices	N/A	N/A
	AL.8.0	<Business Requirements for meter test and inspection>			
	AL.9.0	<Business Requirements for asset tracking and asset management>			
	AL.10.0	System Requirements			
	AL.10.1		All AMI meter assets will be maintained in CIS (H)	N/A - CIS	N/A - CIS
	AL.10.2		All AMI network equipment will be maintained in GIS (H)	N/A - CIS	N/A - CIS
	AL.10.3		The creation and updates of AMI meter assets must be automated wherever possible (H)	CIS - MDMS - AMI	Comply
	AL.10.4		The retirement of meters in CIS must occur automatically for meters removed during the AMI rollout (M)	N/A - CIS	N/A - CIS
	AL.10.5		The update of firmware on AMI assets (meters and network equipment) should be automated as much as possible. (M)	AMI	comply
	AL.10.6		The AMI meters will be tested in Meter Shop Test Management System.	AMI	comply
	AL.11.0	Reporting Requirements			
	AL.11.1		Warranty report: Understanding of devices failing under warranty and ensure that VIWAPA is compensated for devices failing under warranty (H)		

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	AL.11.2		Failure report: Understanding of devices which are failing in the field by type and frequency.		
	AL.11.3		Configuration report: Details on firmware and hardware versions.	MDMS - AMI	Comply
	AL.11.4		Retire report: Details on meters which are retired from service by type, years in service, etc.		
	AL.11.5		Ad hoc reports: The user must be able to easily create ad hoc reports.		
	AL.11.6		Commodity Acceptance reports: Details on meters passing and failing commodity acceptance.		
	AL.11.7		Firmware reports: Details of meters based on firmware version and compatible DCW.	MDMS - AMI	Comply
Events and Alarms	EA.1.0	Failed residential meters should be identified within 3 business days of the failure and resolved within 4 business days following the identification (H). A “failed meter” is a meter which is not communicating or has indicated that the metrology or electric service is not functioning within expected parameters.		AMI Solution Requirements / Business Process Mapping	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	EA.2.0	Failed commercial meters should be identified within 2 business days of the failure and resolved within 2 business days following the identification (H)		AMI Solution Requirements / Business Process Mapping	Comply
	EA.3.0				
	EA.4.0	AMI network issues should be identified within 1 business day of the failure and resolved within 1 business day following the identification. (H)		AMI Solution Requirements / Business Process Mapping	Comply
	EA.5.0	Tamper or diversion of energy should be identified within 10 business days (H)		AMI Solution Requirements / Business Process Mapping	Partial-Comply
	EA.5.1		Tamper or diversion which could be a hazardous condition should be identified immediately		

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	EA.6.0	All events and alarms from the AMI meters must be sent from the AMI HES to the MDMS in real-time via a web service (H)		AMI Solution Requirements / Business Process Mapping	Comply
	EA.7.0	The AMI HES and MDMS should identify and forward critical business events (e.g. outage, voltage) to the appropriate operational system (e.g. OMS) within 10 seconds of receipt (M)		AMI Solution Requirements / Business Process Mapping	Do Not Comply
	EA.8.0	The AMI HES and MDMS should identify business critical hazard events (e.g. hot socket, over current) and initiate a service order or notification within 10 seconds of receipt (M)		AMI Solution Requirements / Business Process Mapping	Do Not Comply
	EA.9.0	All AMI meters should communicate accurate and reliable data with a minimum monthly performance of 90%. (No AMI meters should have a monthly performance of less than 90%). This is a requirement on the AMI HES) (M)		AMI Solution Requirements / Business Process Mapping	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	EA.10.0	The MDMS must identify any AMI meter not meeting the minimum communications performance (H)		AMI Solution Requirements / Business Process Mapping	Comply
	EA.11.0	The MDMS must identify any residential AMI meter not communicating for 3 consecutive days and automatically create a service order request to CIS		AMI Solution Requirements / Business Process Mapping	Comply
	EA.12.0	The MDMS must identify any commercial AMI meter not communicating for 2 consecutive days and automatically create a service order to MDMS		AMI Solution Requirements / Business Process Mapping	Comply
	EA.14.0	The MDMS must receive, validate and store event and alarm messages from the AMI meters and AMI network equipment		MDMS	comply
	EA.14.1		The MDMS must capture all events and alarms from AMI meters as delivered from the AMI HES	MDMS	Comply
	EA.14.2		The AMI meter must send an alarm/event upon a loss of power (power outage) or restoration of power (power restoration)	AMI	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	EA.14.3		AMI HES must send all received events or alarms (from AMI meters or Network devices) to the MDMS	AMI	Comply
	EA.14.4		The MDMS must validate and store all incoming events	MDMS	Comply
	EA.14.5		The MDMS must identify events which are not configured or expected from AMI HES as an exception for follow up by AMI Operations	MDMS	Comply
	EA.15.0	The MDMS must be able to identify critical events and alarms and alert AMI Operations			
	EA.15.1		The MDMS must identify critical events (as identified in the Meter Data Requirements Matrix) and create a service order for follow up	MDMS	Comply
	EA.15.2		All critical events must be validated by the MDMS prior to initiating action for follow up	MDMS	Comply
	EA.16.0	The MDMS must be able to automatically request Service Orders from CIS			
	EA.16.1		The MDMS must automatically, based on configuration, initiate a request for a Service Order upon identification of a validated critical event	MDMS	Comply
	EA.16.2		The MDMS must automatically, based on configuration, initiate a request for a Service Order upon identification of a meter with a loss of communication	MDMS	Comply
	EA.16.3		The MDMS must allow an operator to manually initiate a request for a Service Order	MDMS	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	EA.16.4		An authorized administrator must be able to enable or disable the request of a Service Order by the MDMS based on event type	MDMS	Comply
	EA.16.5		The MDMS must create an email/urgent notification to AMI Operations when a hot socket is detected 1. Initially urgent notification will be a phone call 2. AMI Operator will be the initiator. 3. NOTE: To be considered, enable the AMI meter to automatically disconnect upon Hot Socket.	MDMS	Comply
	EA.16.6		Urgent notifications for hot socket should only be issued for validated hot socket alerts	MDMS	Comply
	EA.16.7		Hot socket Service Order must be automatically closed in MDMS, as the MDMS initiated the Service Order, when work is completed	MDMS	Comply
	EA.16.8		The MDMS must create a Service Order for field investigation for specific events and alerts.	MDMS	Comply
	EA.16.9		The solution must allow an authorized user to authorize the request of any Service Order	MDMS	Comply
	EA.16.10		The MDMS must not create duplicate Service Order Requests for a meter or network device.	MDMS	Comply
	EA.16.11		The MDMS must identify that a specific event or analysis (e.g. Missing read) has triggered the Service Order Request and not create a second Service Order Request for the same meter or device.	MDMS	Comply
	EA.16.12		The MDMS must prevent the creation of excessive Service Order Requests.	AMI Solution Requirements / Business Process Mapping	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	EA.17.0	System Requirements			
	EA.17.1		The MDMS will identify and initiate action items for the resolution of failures and issues identified as requiring automated work management (H)	AMI Solution Requirements / Business Process Mapping	Comply
	EA.17.2		The MDMS should not create more than 100 requests for service Orders per day without explicit override authorization. This should be configurable.	AMI Solution Requirements / Business Process Mapping	Comply
	EA.17.3		CIS Service Orders will be used to manage and track all field activities associated with the meter resolution of field problems (H)	N/A - CIS	N/A - CIS
	EA.18.0	Reporting Requirements			
	EA.18.1		Report showing the time of last communication and incoming communications performance for any network device (Last Packet Query) (AMI HES)	AMI Solution Requirements / Business Process Mapping	Project Specific Report
	EA.18.2		Report showing meters that have not reported for at least 24 hours and how many days since their last report (MDMS)	AMI Solution Requirements / Business Process Mapping	Project Specific Report
	EA.18.3		Report showing meters that are not reporting consistently. Metric for this consistency should be configurable. (MDMS)	AMI Solution Requirements / Business Process Mapping	Project Specific Report
	EA.18.4		Report showing meters with too high or too low consumption. (MDMS)	AMI Solution Requirements / Business Process Mapping	Comply
	EA.18.5		Report showing meters with significant change in consumption (50%). Ideally, the percentage should be configurable. (MDMS)	AMI Solution Requirements /	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
				Business Process Mapping	
	EA.18.6		Report showing meters not meeting the minimum communication performance (<90% success over 30 days). (MDMS)	AMI Solution Requirements / Business Process Mapping	Project Specific Report
	EA.18.7		Report showing meters meeting the loss of communication metric (3 days for residential, 2 days for commercial) and the time/date of last successful communication. (MDMS)	AMI Solution Requirements / Business Process Mapping	Comply
	EA.18.8				
	EA.18.9		Report showing power quality issues based upon a defined group of meters. (MDMS)	AMI Solution Requirements / Business Process Mapping	Comply
	EA.18.10		Report showing outage(s) upon a defined group of meters. (MDMS)	AMI Solution Requirements / Business Process Mapping	Project Specific Report
	EA.18.11		Report showing meters generating more than 5 (configurable) events in a day. (MDMS or AMI HES)	AMI Solution Requirements / Business Process Mapping	Comply
	EA.18.12		Summary daily report showing number of events received in the last 24 hour period by event type. (MDMS or AMI HES)	AMI Solution Requirements / Business Process Mapping	Comply
AMI Operations	AO.1.0	Acquire, validate and deliver AMI data within SLA (H)			

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	AO.1.1		<p>Collect 99.5% of registers and intervals daily (H)</p> <p>This metric applies to those meters which have successfully passed all commissioning and provisioning validations and has been accepted as an AMI billing meter. This metric is measured by counting all of the valid (not estimated) midnight timestamped kWh register reads from AMI billing meters stored within the MDMS database for the last 30 days as compared to the total number of AMI billing meters. For intervals, this metric is measured by counting all of the valid (not estimated) kWh-Received intervals divided by 96 from AMI billing meters stored within the MDMS database for the last 30 days as compared to the total number of AMI billing meters.</p>	AMI Solution Requirements / Business Process Mapping	Comply
	AO.1.2		<p>Process and store 99.5% of registers and intervals by 10:00PM daily (H)</p> <p>This metric applies to those meters which have successfully passed all commissioning and provisioning validations and has been accepted as an AMI billing meter. This metric is similarly measured as above and includes estimated reads as well. In addition, only those reads with an insert time prior to 10:00PM each day will be counted. [NOTE: 10:00PM allows estimation to run for the register reads</p>	AMI Solution Requirements / Business Process Mapping	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
	AO.1.3		<p>Deliver 99.5% of meter reads for billing within the billing window by 9:00 am on each cycle day (H)</p> <p>This metric applies to those meters which have successfully passed all commissioning and provisioning validations and has been accepted as an AMI billing meter. This metric is measured by counting all of the meter reads delivered to CIS for billing over the previous 30 days as compared to the number of read requests from CIS over the previous 30 days.</p>	AMI Solution Requirements / Business Process Mapping	Comply
	AO.2.0	Maintain AMI Network availability for data collection and remote operation of AMI devices within SLA (H)		AMI Solution Requirements / Business Process Mapping	Comply
	AO.3.0	System Requirements			
	AO.3.1		AMI HES will be maintained within 1 version level of the most current commercially released version and in accordance with the VIWAPA standard SLA for servers and database (H)	AMI Solution Requirements / Business Process Mapping	Comply
	AO.3.2		MDMS will be maintained within 1 version level of the most current commercially released version and in accordance with the VIWAPA standard SLA for servers and database (H)	AMI Solution Requirements / Business Process Mapping	Comply
	AO.3.3		Test and production environments will be maintained for both AMI HES and MDMS (H)	AMI Solution Requirements /	Comply

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
				Business Process Mapping	
	AO.3.4		Disaster recovery environments and procedures are in place for both AMI HES and MDMS (H)	AMI Solution Requirements / Business Process Mapping	Comply
	AO.8.0	Reporting Requirements			
	AO.8.1		MDMS must have a daily report to demonstrate compliance or lack thereof with Business requirement #1.a.	AMI Solution Requirements / Business Process Mapping	Project Specific Report
	AO.8.2		MDMS must have a daily report to demonstrate compliance, or lack thereof, with Business Requirement #1.b.	AMI Solution Requirements / Business Process Mapping	Project Specific Report
	AO.8.3		MDMS must have a daily report to demonstrate compliance, or lack thereof, with Business Requirement #1.c.	AMI Solution Requirements / Business Process Mapping	Project Specific Report
	AO.8.4		Daily snapshot report which answers the following questions: a) Are all services and jobs running in AMI HES? No ERRORS in logs? b) Are all services and jobs running in MDMS? No ERRORS in logs? c) Are all “collectors” operational and at correct firmware? d) Are all “routers” operational and at correct firmware? e) Number of meters at each status (normal,	AMI Solution Requirements / Business Process Mapping	Project Specific Report

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
			lost, init failed, etc.) f) Actual vs. expected # meter reads received between midnite and 7AM g) All billing requests queued in MDMS for delivery		
	AO.8.5		Daily AMI Operations Report, including the following: a) Network Device availability yesterday b) Packet/traffic performance by Network Device c) Register read collection performance (at AMI HES) – # reads w/o retry, # reads w/ retry, # reads not collected d) Register read receipt performance (at MDMS) – #reads rcvd & validated, # reads rcvd & invalid, # reads not rcvd and estimated, # meters with no read e) Interval read collection performance (at AMI HES) – 100% rcvd, <100% & >0% rcvd, # meters w/ no interval reads f) Interval read receipt performance (at MDMS) – 100% rcvd and valid, 100% rcvd or estimated, # meters w/ no interval reads (valid or estimated) g) Billing reads vs. requested – actual,	AMI Solution Requirements / Business Process Mapping	Project Specific Report

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
			estimated and not delivered h) Events by type		
	AO.8.6		# of failed devices found today, with failure reason	AMI Solution Requirements / Business Process Mapping	Project Specific Report
	AO.8.7		# of bad data synch issues found from CIS, Between MDM and AMI HES	AMI Solution Requirements / Business Process Mapping	Project Specific Report
	AO.8.8		# of MDM SR's worked and # MDM SR's not worked	AMI Solution Requirements / Business Process Mapping	Project Specific Report
	AO.8.9		# of poorly communicating devices	AMI Solution Requirements /	Project Specific Report

BPM	Requirement ID	High Level Requirement	Detail Requirements	Requirement Category	Compliance
				Business Process Mapping	
	AO.8.10		Areas of network identified as needing additional infrastructure	AMI Solution Requirements / Business Process Mapping	Project Specific Report
	AO.8.11		Average number of hops for routers and meters	AMI Solution Requirements / Business Process Mapping	Project Specific Report
	AO.8.12		% unavailability for meters and routers	AMI Solution Requirements / Business Process Mapping	Project Specific Report
	AO.8.13		Meters reporting vs. Commissioned meters	AMI Solution Requirements / Business Process Mapping	Project Specific Report
	AO.8.14		Meters installed vs. Meters Provisioned vs. Meter commissioned	AMI Solution Requirements / Business Process Mapping	Project Specific Report
	AO.8.15		Billing determinants requested vs. Billing determinants supplied	AMI Solution Requirements / Business Process Mapping	Project Specific Report

19.Exhibit E: Initial Solution Architecture

(Insert final PDF version once SOW is completed)