



Advanced Metering Infrastructure (AMI) Program Update

'The Digital Foundation to Enhance the Customer Experience'

Public Utility Board
Study Session
January 23, 2019



●●● Agenda

1. Introduction
2. AMI Contract Framework
 1. Master Supplier Business and Services Agreement (MSA)
 2. Statements of Work (SOW)
3. AMI Contract Update
4. Meter Safety Review
5. Wrap Up



**UTILITY TECHNOLOGY SERVICES
MASTER SUPPLIER BUSINESS AND SERVICES AGREEMENT**



About the Master Supplier Agreement



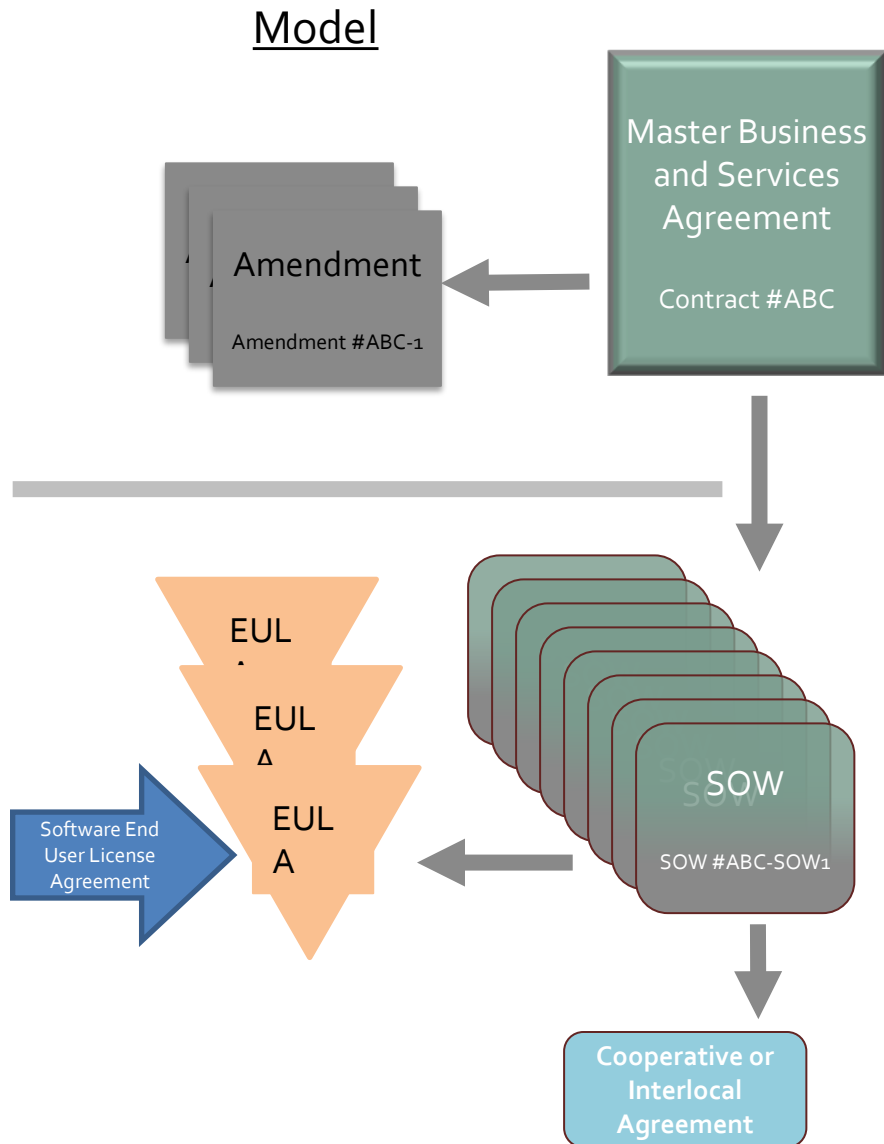
What it is

- A relationship and compliance agreement
- A risk mitigation instrument
- Supports technology requirements
- Streamline negotiations
- Consistent terms across Suppliers

What it is Not

- A spending/purchasing agreement
- An open-ended alternative to solicitation and Purchasing Policy requirements
- A cooperative or interlocal agreement
- A construction or public works contract

Master Supplier Agreement Model



Attributes

Master Agreement

- Perpetual/evergreen
- 3/5 year review
- One per supplier
- Highest level terms
- No budget
- No pricing

Statement of Work (SOW)

- Contains project Scope
- Contains budget
- Contains pricing, payment, schedule & terms
- Limited in time
- Under RFP/Quote/memo requirements
- Under Procurement & Signature policy
- Cooperative/Interlocal applied



Benefits

- **Master terms are in place prior to any proposed work**
- **Strong language protections that do not change**
 - Indemnity
 - Limitation of Liability
 - Insurance
 - Cloud Services
- **Critical compliance language included upfront**
 - CIP - Data Protection - Cybersecurity
 - Personally Identifiable Information (PII)
- **Standardization of Supplier terms and conditions across City**
- **Relieve Project Lead responsibilities for Legal contract negotiations (Project Lead focus on SOW/Project deliverable terms only)**
- **Effectively addresses contract risk**
- **Ease legal and project lead's burden for contract development**
- **Save resource time and costs (legal, business, supplier)**



Benefits

Reduce the time to negotiate supplier contracts

- Reduce Legal review time
- Reduce Project Lead contract negotiations to SOWs only

Effectively address contract risk

- Establish supplier accountabilities for their work/product
- Fair/consistent indemnity, protections, guarantees, security, controls, and compliance

Effectively address compliance

- Supplier conduct
- CIP, City Policies, Laws, etc.
- Data protection and cybersecurity requirements



Solution Providers



AMI meter & network vendor



Power & Water Meters



AMI Base Station(s)



AMI head-end system

- Power & Water Meter Supplier
- Meter Communication Network Infrastructure
- Head-end System (HES) data collector
- Sandbox Deployment



Customer Information System



A Siemens Company

Meter Data Mgmt. System

Sensus contract

Contract Component	Description	Price
Master Service Agreement (MSA)	General Terms and Conditions	NA
Sandbox Statement of Work	Implementation of a test/non production environment	\$185,000
Hardware Statement of Work	Meter and network infrastructure	\$33,000,000
Implementation Statement of Work	Professional services for implementing the AMI system	\$642,500
Software as a Service (Saas) Statement of Work	Network and system management	\$1,326,000
Spectrum SOW	Network licensing agreement	NA
Total Contract Value		\$35,153,500

Sensus contract: Hardware SOW



➤ Power Hardware

- Approximately 180,000 electric meters

➤ Water Hardware

- Approximately 110,000 water meters

➤ Networking Devices

- Approximately 120 network devices

Sensus contract: Implementation SOW



➤ Implementation Statement of Work

- Project Management
- Business and Technical Requirements Documentation
- Field Network Design
- Field Network Deployment Support
- First Article Testing
- Endpoint Installation
- Network Planning
- Security Planning
- Design/Setup of Data Center
- Remote Network Infrastructure (RNI) Deployment
- Network Coverage Guarantees (100% coverage)
- System Acceptance Testing
- RNI Integration and Configuration Assistance
- Acceptance Testing
- Operations System Familiarization

Sensus contract:



Software as a Service (SaaS) SOW

➤ Software as a Service (SaaS) SOW - \$1,326,000

➤ Description of services

- Regional Network Interface software
- Automation Control

➤ Use of SaaS

➤ Supplier provided

- Required hardware
- Production and disaster recovery environments
- Patches, updates, and upgrades
- Configuration and management of equipment (server hardware, routers, switches, firewalls in data centers)
- **Capacity and performance management**
- Database management
- Incident and problem management
- **Security Management (24x7x365) – NIST Security Standards**



Meter Data Management System



Power &
Water Meters



AMI Base Station(s)



AMI head-end system



Customer Information System



Meter Data
Management System

- *System of record for meter data*
- *Collects and converts raw meter data into meaningful information of other systems*
- *Collects, processes, sends billing determinants*
- *Collects and analyzes meter events and alarms.*
- *Synchronizes with SAP and maintains synchronization of AMI*

Omnetric contract

Contract Component	Description	Price
Professional Service Agreement	General Terms and Conditions	NA
Sandbox Statement of Work	Implementation of test/non-production environment	\$90,482
Implementation Statement of Work	Implementation and integration of the MDMS	\$1,168,452
Software License	MDMS Licenses	\$50,000
Total Contract Value		\$1,308,934

Omnetric review

➤ Implementation SOW

- Delivery and tested EnergyIP
- AMI Data Storage
- Meter Usage Data Repository
- Real-time data processing
- Data synchronization engine
- Service Requests
- Real-time validation, estimation and editing (VEE)
- System Administration console
- Operational dashboard
- BIRT Reporting Framework
- Device Tracking
- AMI System Monitoring
- AMI Exception Handling
- Event Notification Services
- Sensus RNI AMI Integration Adapter
- Register Billing Application
- Interval Billing Application
- On Demand Read
- Remote Connect/Disconnect Application

System Integration



Power &
Water Meters



AMI Base Station(s)



AMI head-end system



Customer Information System



Meter Data
Management System

Integration contract

Contract Component	Description	Price
Master Service Agreement	General Terms and Conditions	NA
Implementation Statement of Work	Integration services	\$3,885,804
Total Contract Value		\$3,885,804

Integration review

➤ Implementation SOW

- System configuration
 - Sandbox
 - Blueprinting
 - AMI System
- Integration services
 - Project Management
 - Subject Matter experts for:
 - Architecture
 - Configuration
 - Functionality
 - Application Programming Interface (API)
- Testing services
 - Correct all defects and deficiencies



Meter Safety

➤ RF Emissions

- The output of a Sensus water SmartPoint is about 660 times lower than the average use of a cell phone and the output of a Sensus electric SmartPoint is about 220 times lower than the average use of a cell phone.
- The output of a Sensus electric meter is about twelve times lower than a mesh electric meter.
- The SmartPoint is typically mounted away from human contact such as near the meter in a basement, outside on the wall of the house or in a pit outside the house. The field strength only 10 feet away from the SmartPoint will be reduced by a factor of 1000 or more.
- We can conclude then that the total energy presented to humans by this system is at least 50,000 times less than today's cell phone.
- The Sensus Water and Electric meters produce approximately 12 times less than the Mesh Electric Meter.

Meter Safety

➤ Hot socket & Overvoltage Protection

- The Sensus electric meter has two temperature sensors within the meter module that provide alarms when an overheat situation is occurring.
 - Sensus is the only meter manufacturer that provides two temperature sensors.
 - The high temperature alarms are configurable which will allow Tacoma Public Utilities to set custom alarm points.
- The Sensus meter includes an automatic disconnect within the meter which disconnects the meter in emergency high temperature events
 - Sensus is the only meter manufacturer that provides this additional safety feature
- Sensus performs rigorous testing procedures to simulate lightning strikes, surges, and overvoltage scenarios to ensure a safe meter failure process

Questions

