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December 12, 2006

Benchmarking for Utilities - Meeting Notes

Webcast 10:00 - 11:45 am, Tuesday, December 12, 2006

1) Attending:

LADWP –Steve Matsuda

PG&E – Keith Forsman, Sukhwant Singh

Sempra – Loida Mateo-Rivera

SCE – Chris Buntine

SMUD – Ed Sanchez, Paul Starr

Others – Tracy Narel (EPA), Tom Oliver (SRA), Mike Langley (CA DGS),
Karen Herter (HMG)

2) Presentations available to download at:

<http://www.h-m-g.com/downloads/EnergyBenchmarking/>

3) Request to EPA/SRA – Can you do the following?

a) Add a data field for account #

b) Allow a custom report containing:

- Account #
- Service/Meter ID #s
- Building ID

This would simplify the printout of data needed for the back of the release form for the customer, and simplify the manual synchronization for at least some of the utilities.

4) The data release form is on the HMG website at:

<http://www.h-m-g.com/downloads/EnergyBenchmarking/>

5) HMG can support a bulletin board if we think it would be useful.

*Helping California
Buildings Comply with
Executive Order S-20-04:
Energy Use Benchmarking*

Karen Herter
Heschong Mahone Group
December 12, 2006

What is Benchmarking?

- Energy use of a building for a given period of time
- Normalized by
 - Building size
 - Location
 - Weather
 - Operational influences (e.g. occupancy and hours of operation)
- Allows
 - Comparison with other buildings
 - Tracking of building performance over time
- Motivations
 - Efficiency improvements
 - Justification of financial investments

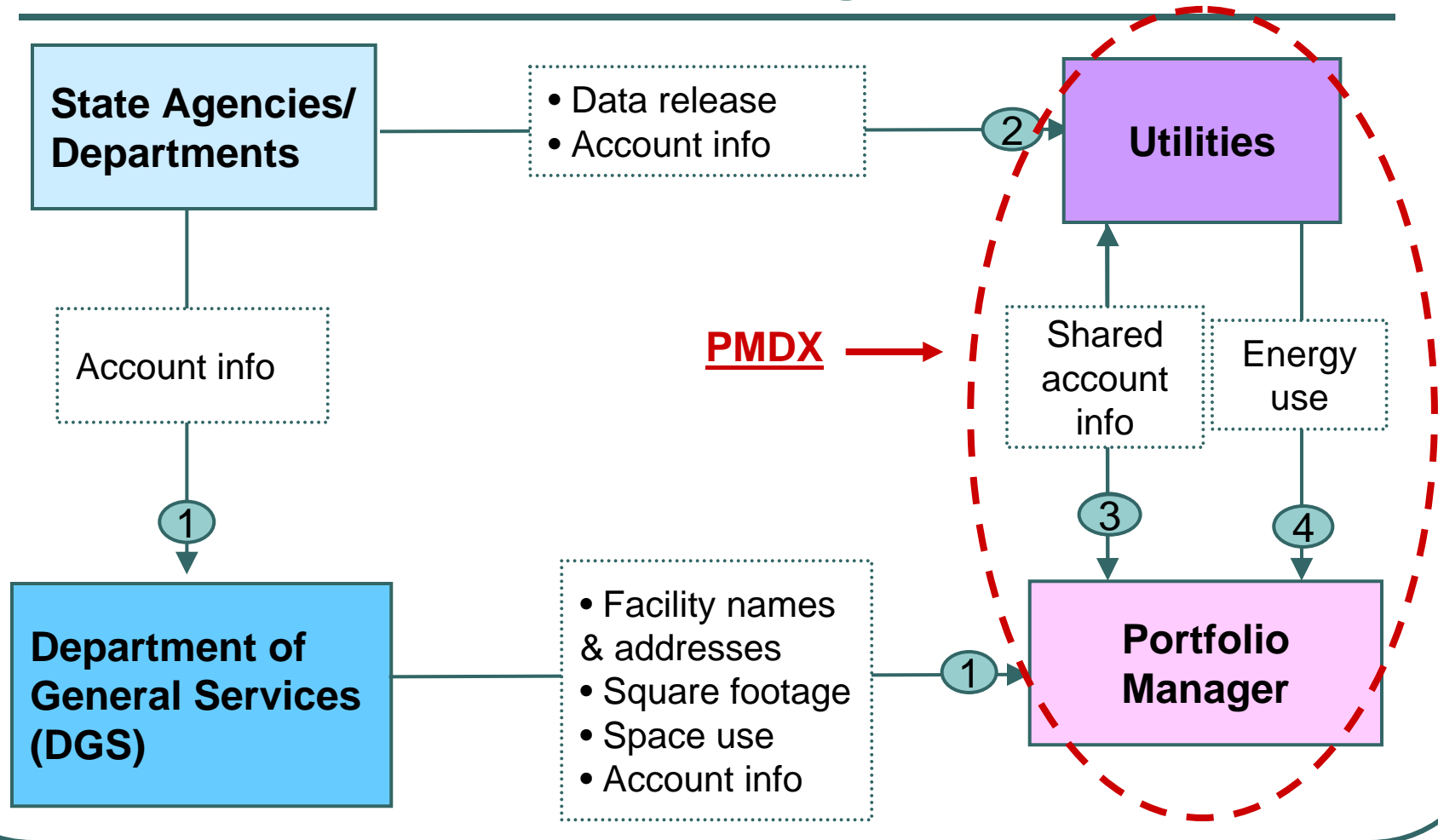
Why do State buildings have to be benchmarked?

- Executive Order S-20-04 (Dec 2004) – Green Buildings Initiative
 - All state-owned buildings must be benchmarked by 2007
 - ...followed by all commercial building in the state
 - California Energy Commission is the benchmarking lead
- California Energy Commission
 - U.S. EPA's benchmarking tool, Portfolio Manager
 - Established the Benchmarking Work Group
- Benchmarking Work Group
 - Facilitating the development of the benchmarking database
 - Asking energy utilities to automate energy use data upload

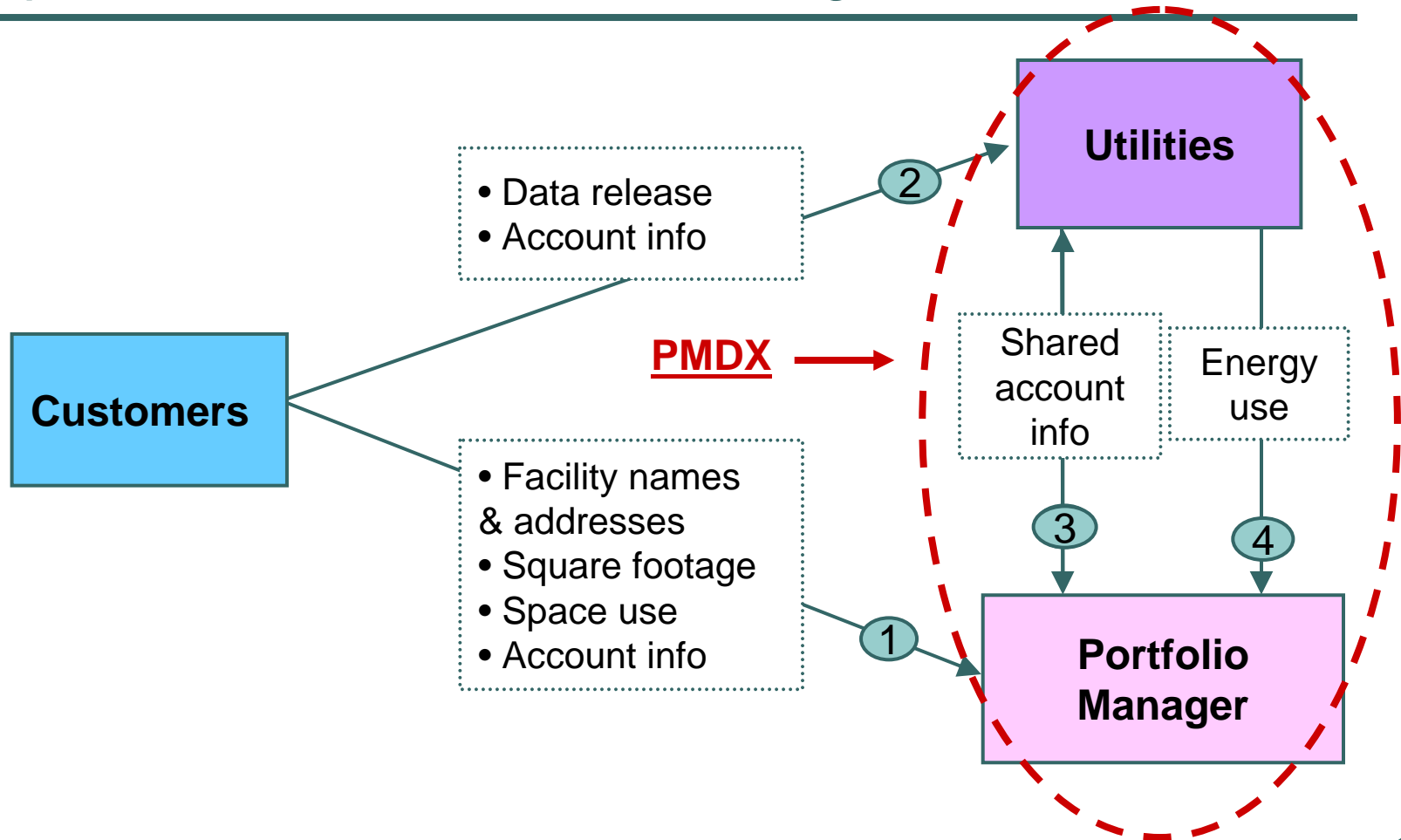
What's in it for the Utilities?

- Valuable customer data
 - Facility square footage
 - Occupancy
 - Space use
 - Total facility energy use (all fuels)
- Product and service leads
- Savings goals
- Reduced number of calls from state clients

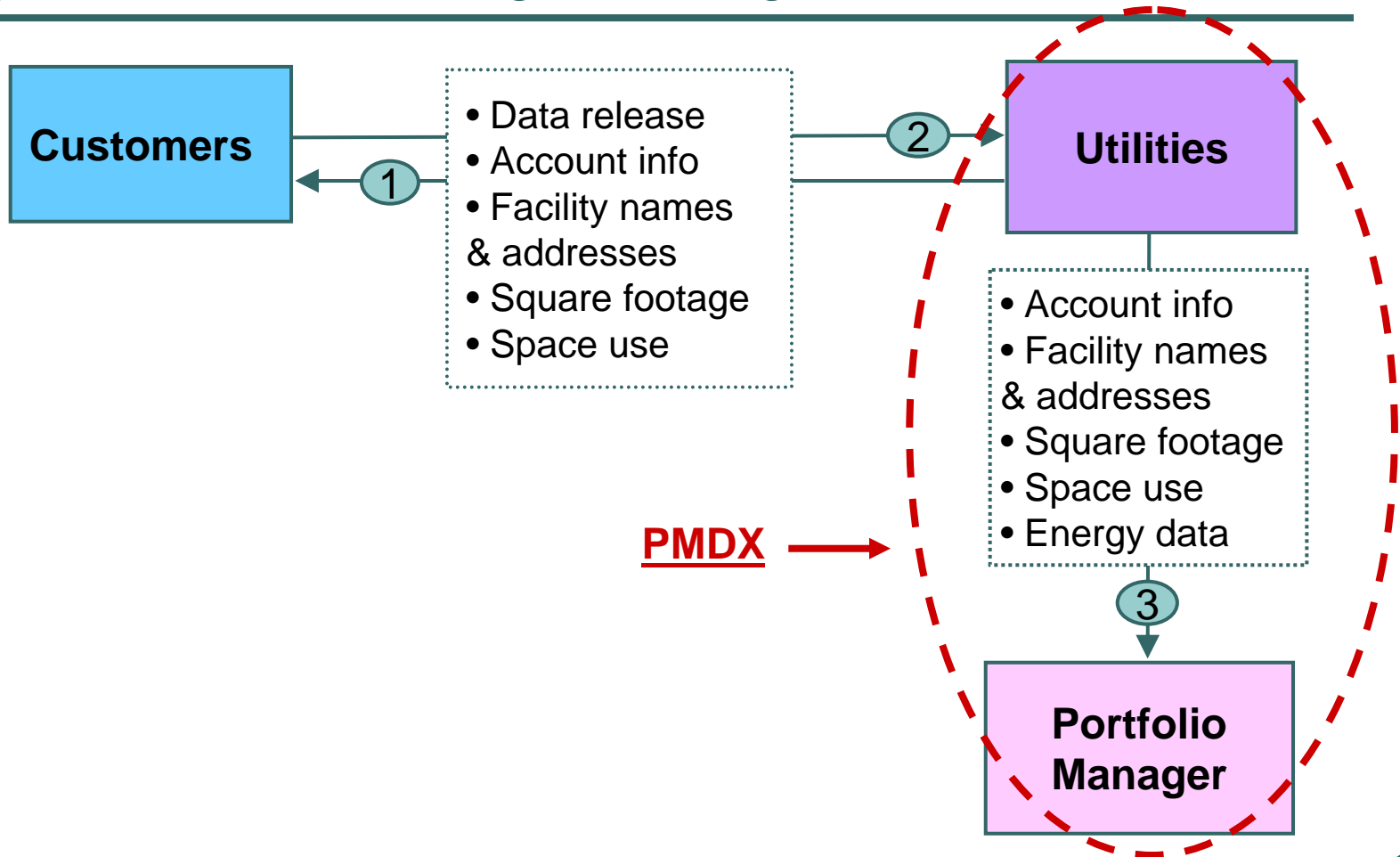
State Benchmarking Process



Non-State Benchmarking Option 1 - Limited Utility Involvement



Non-State Benchmarking Option 2 - Heavy Utility Involvement



Portfolio Manager Data Exchange (PMDX)

1. Create a Host Access System or “HAS” account
2. Develop XML files and Web Services
3. Synchronize Utility data with customer’s facility data in Portfolio Manager
4. Upload Utility data to Portfolio Manager
 - Vetted by Pacific Gas & Electric Company
 - Conforms to the requirements of the Federal Information Security Management Act (FISMA)

Step 1. Initiate a HAS Account

- Each utility must create their own HAS account to upload and access their customer's data.
- One-time registration at <https://www.energystar.gov/istar/has>
- Provides access to:
 - Technical reference material
 - XML Schemas
 - Sample Web services clients

Step 2. Develop XML data files and Web Services clients

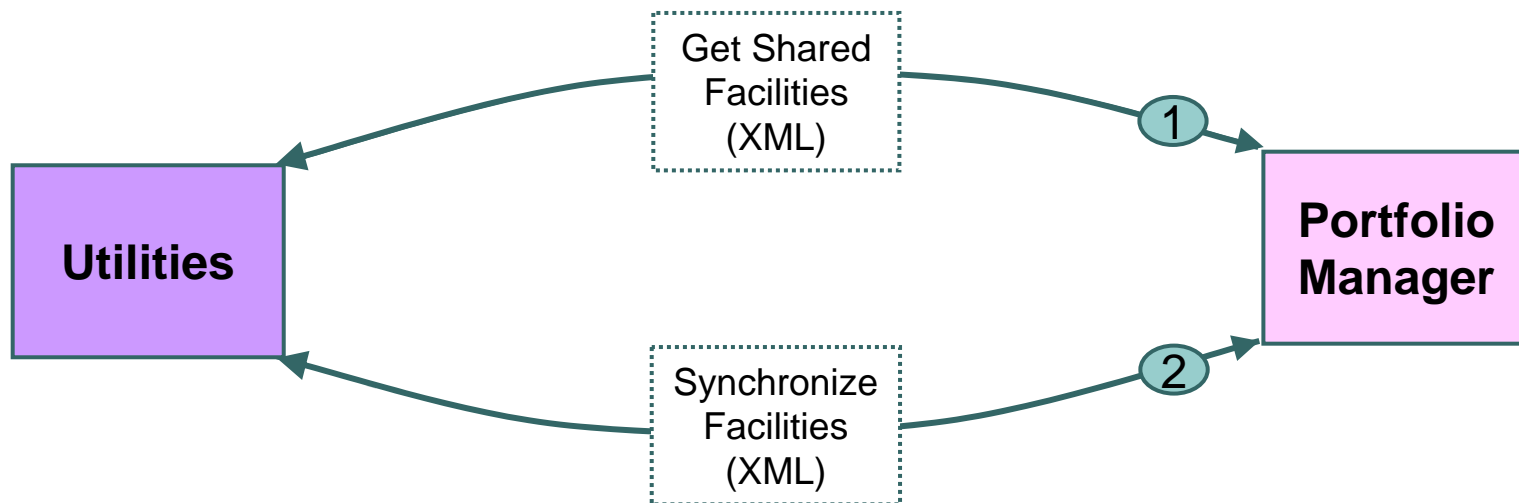
- Build XML data files based on EPA XML schemas
 - Get Shared Facilities schema
 - To list all facilities in Portfolio Manager shared with your utility
 - Synchronize Facilities schema
 - To map Facility & Meter identifiers to those in Portfolio Manager
 - Data Management schema
 - To upload meter data for facilities in Portfolio Manager
- Develop Web Services clients (or use those provided by EPA)
 - Automated Data Synchronization web service
 - To process Get Shared Facilities or Synchronize Facilities schemas
 - Data Management web service
 - To process the Data Management schema

Step 2. Develop Web Services clients and XML data files

- EPA resources for Web Services clients
 - WSDLs that describe the web services
 - Web-based client within HAS
 - Downloadable Java/J2EE Web services clients (Unix or Windows)
 - Instructions for how to create your own VB.Net client
- Published XML schemas
 - For use with Data Synchronization web services
 - Get Shared Facilities service (synchronous) – to list PM facilities
 - Synchronize Facilities service (synchronous) – to map utility & PM facilities
 - For use with Data Management web services
 - Data Management service (asynchronous) – to upload data to PM

Step 3. Synchronize Utility data with Portfolio Manager data

Utilities use the Automated Synchronization web service to map utility accounts to Portfolio Manager accounts



Step 4. Process customer requests and upload data

- Utilities will receive from each customer:
 - A standard data release form
 - Facility information
 - Names and addresses of facilities
 - Building IDs assigned by Portfolio Manager
 - Account and meter identifiers
- Utilities use the Data Management web service to upload XML documents containing facility energy use data



Next Steps for Utilities

0. Designate staff and business strategy
1. Initiate a HAS account
2. Work with EPA to develop XML and web services
3. Test synchronization process
4. Begin State data upload services
5. Develop strategies for non-state buildings
 - e.g. outreach to existing program participants

EPA Resources For More Information

- For Questions or Assistance:

- Contacts:
 - Administrator email: buildings@energystar.gov
 - Toll Free Hotline: 1-888-782-7937
 - National Manager: Laura Helmke-Long
helmke.laura@epa.gov
 - Technical Rep: Kudret Utebay
kutebay@cadmusgroup.com

- Online Resources:
 - Portfolio Manager <http://www.energystar.gov/istar/pmpam/>
 - HAS <https://www.energystar.gov/istar/has>



Portfolio Manager Data Exchange (PMDX)

Overview and Technical Guidance

December 8, 2006





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 - Setting up an Account
 - Synchronizing Utility Accounts with Portfolio Manager Accounts
 - Uploading Utility Data into Portfolio Manager Accounts
- **Technical Support**



PMDX Overview

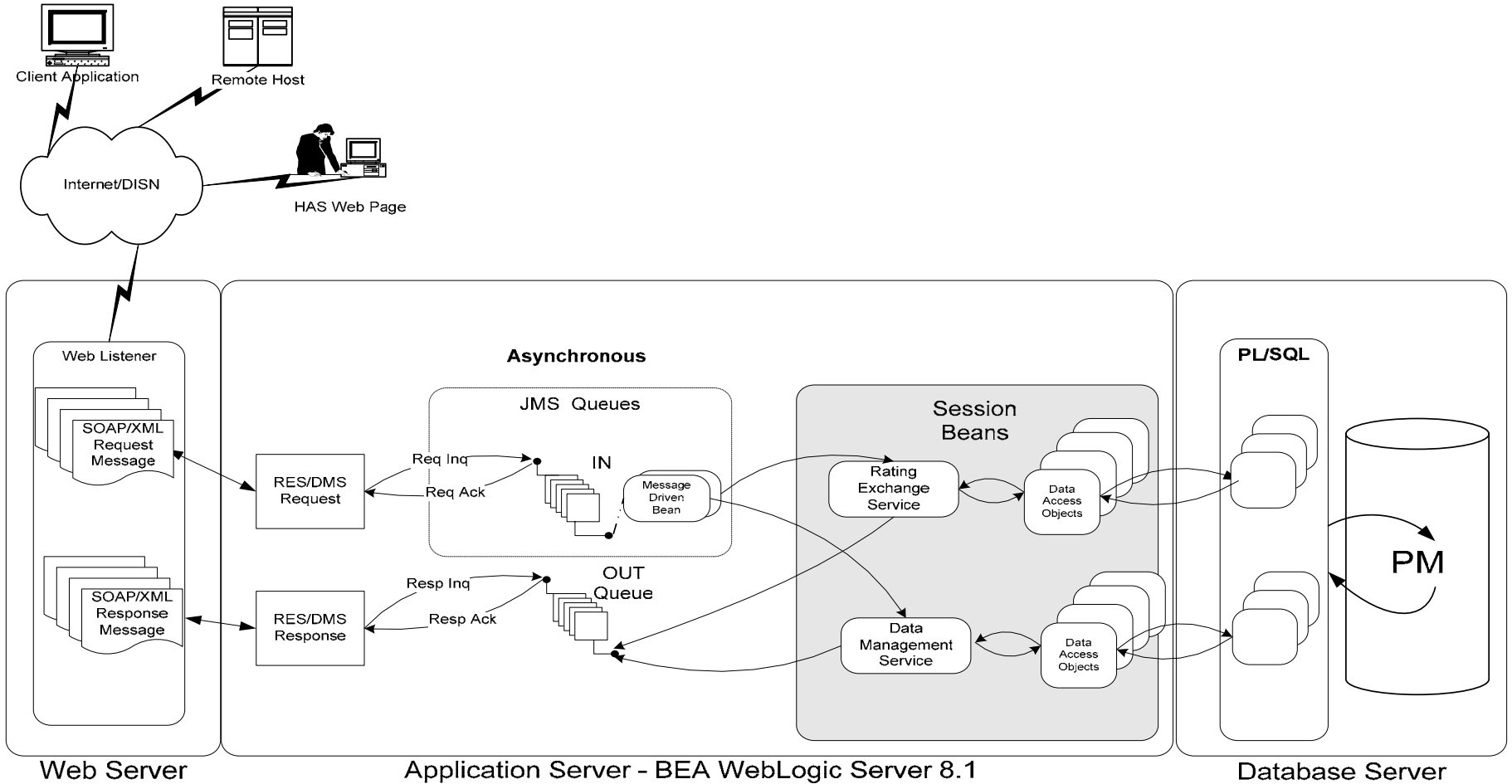


PMDX Overview

- **Portfolio Manager Data Exchange (PMDX) is a set of Web services, provided by EPA, that allows utilities to upload data directly into Portfolio Manager accounts**
 - Utilizes Simple Object Access Protocol (SOAP) and Web Services Description Language (WSDL)
 - Requires conformance with EPA provided XML schemas
 - Supports passing the XML document either as a string or as an attachment
 - Requires the use of username/password authentication over Secure Sockets Layer (SSL)
 - Utilizes Transaction IDs for asynchronous transactions



PMDX Overview: Architecture Diagram





PMDX Overview: Web Services

- **PMDX currently offers the following services to utilities:**
 - **Data Management Service (DMS)** - Allows utilities to update, edit, and delete facility data within a customer's Portfolio Manager account. [asynchronous service]
 - **Rating Exchange Service (RES)** - Provides the ability for utilities to request Ratings and related performance metrics for multiple time periods from a customer's Portfolio Manager account. [asynchronous service]
- **For DMS and RES, PMDX currently requires that each transaction includes facility data for only one Portfolio Manager account**



PMDX Overview: Web Services (cont'd)

- **In February 2007, PMDX will offer additional services to help simplify the mapping of data between a utility's system and Portfolio Manager**
 - **Get Shared Facilities** – Allows utilities to access the list of Portfolio Manager facilities that customers have shared [synchronous service]
 - **Synchronize Facilities** – Allows utilities to upload the set of facility and meter IDs from their systems that map to Portfolio Manager's internal IDs [synchronous service]



PMDX Overview: Host Access System (HAS)

- **Secure, Web-based access to PMDX documentation, utilities, and support**
- **Registration for one Production and one Test account (required for using PMDX)**
- **Technical documentation (User's guide, WSDL, XML schemas)**
- **Sample Web services clients**
 - Web-based client (accessed through HAS home page)
 - Java/J2EE clients (for Windows and Unix)
 - Instructions for facility a VB .Net client
- **Views of your customers' Portfolio Manager facility data**
- **Views of your Test transactions**
- **Access to PMDX Technical Support**



Using PMDX



Using PMDX: Setting up an Account

- Register for Test and Production accounts through HAS (<https://www.energystar.gov/istar/has/>)
- Test and Production Accounts require a unique username and password
- **Test Accounts**
 - Used to allow utilities to test Web services transactions before making changes to customer Portfolio Manager accounts
 - Activities performed in Test Accounts are only viewable within HAS. Portfolio Manager users cannot view these accounts
- **Production Accounts**
 - Used to allow utilities to submit data into customer Portfolio Manager accounts
 - Production Account username and password are used to log into HAS



Using PMDX: Synchronizing Utility Accounts with Portfolio Manager Accounts (1)

- **Today, the technical process for synching utility accounts with customer Portfolio Manager Accounts is:**
 1. Customer enters facilities into Portfolio Manager (via facility import spreadsheets or data entry in Portfolio Manager)
 2. Customer shares Portfolio Manager account username, facility names, and facility IDs with Utility
 3. Utility contacts PMDX technical support and requests a customer account facility export to use to map facility and meter IDs
 4. Utility completes spreadsheet and returns to PMDX technical support
 5. PMDX technical support imports the Utility IDs into Portfolio Manager
 6. Utility is ready to begin providing meter data for customer



Using PMDX: Synchronizing Utility Accounts with Portfolio Manager Accounts (2)

- **In February, the process will change to the following:**
 1. Customer enters facilities into Portfolio Manager (via facility import spreadsheets or data entry in Portfolio Manager)
 - Utilities must register in HAS first!
 2. Customer shares facilities directly with Utility through Portfolio Manager Multi-Facility sharing feature
 - Utility HAS contact will be notified via email
 3. Utility uses the **Get Shared Facilities** Web service
 4. Utility uses the **Synchronize Facilities** Web service
 - Utilities must indicate whether to leave or remove existing meters
 5. Utility is ready to begin providing meter data for customer



Using PMDX: Providing Utility Data to Portfolio Manager Accounts (1)

- **The Data Management Service (DMS) is currently the only Web service that can be used to submit utility data to Portfolio Manager**
- **Use the HAS Test Account to test your utility data transfers before submitting data into a customer's live Portfolio Manager Account**
 - A new testing feature will be available in February
- **If providing utility data for an existing facility, make sure that you have previously synched up with that facility and are providing the correct external facility ID (B_ID)**
 - If the external B_ID does not match, the system will set up a new facility, resulting in a duplicate
- **Currently, utility data for only one customer's portfolio account can be submitted per DMS request**



Using PMDX: Providing Utility Data to Portfolio Manager Accounts (2)

- **If the external meter ID provided by the utility does not match an existing ID in Portfolio Manager, PMDX will create a new meter**
- **There is no automated way to modify the external ID of an existing meter once it has been synchronized with the utility**
- **If utility data will no longer be provided for a particular meter, it is recommended that the meter be set to “Inactive” so that Portfolio Manager does not continue to recognize it in future ratings calculations**
- **Any breaks in utility data continuity (e.g., stopping the update of a meter, adding a new meter) will result in a facility not being able to receive a rating for any 12-month period that overlaps the timeframe when that break occurred**
 - Customers will need to manually correct the time series to get a rating



Technical Support

- To contact PMDX Technical Support, access us through HAS (Contact Us) or via email buildings@energystar.gov
- **PMDX Technical Representative**
 - Steve Murray, SRA, steve_murray@sra.com
- **PMDX Systems Lead**
 - Tom Oliver, SRA, tom_oliver@sra.com